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THE
CALENDAR

OF THE

University of Toronto



FACULTY OF
APPLIED SCIENCE AND ENGINEERING
1916-1917

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1916		CALENDAR		1916	
JANUARY		FEBRUARY		MARCH	
Sun.	2 9 16 23 30	Sun.	6 13 20 27	Sun.	5 12 19 26
Mon.	3 10 17 24 31	Mon.	7 14 21 28	Mon.	6 13 20 27
Tues.	4 11 18 25 ..	Tues.	1 8 15 22 29	Tues.	7 14 21 28
Wed.	5 12 19 26 ..	Wed.	2 9 16 23 ..	Wed.	1 8 15 22 29
Thur.	6 13 20 27 ..	Thur.	3 10 17 24 ..	Thur.	2 9 16 23 30
Fri.	7 14 21 28 ..	Fri.	4 11 18 25 ..	Fri.	3 10 17 24 31
Sat.	1 8 15 22 29 ..	Sat.	5 12 19 26 ..	Sat.	4 11 18 25 ..
MAY		JUNE		JULY	
Sun.	7 14 21 28	Sun.	4 11 18 25	Sun.	2 9 16 23 30
Mon.	1 8 15 22 29	Mon.	5 12 19 26	Mon.	3 10 17 24 31
Tues.	2 9 16 23 30	Tues.	6 13 20 27	Tues.	4 11 18 25 ..
Wed.	3 10 17 24 31	Wed.	7 14 21 28	Wed.	5 12 19 26 ..
Thur.	4 11 18 25 ..	Thur.	1 8 15 22 29	Thur.	6 13 20 27 ..
Fri.	5 12 19 26 ..	Fri.	2 9 16 23 30	Fri.	7 14 21 28 ..
Sat.	6 13 20 27 ..	Sat.	3 10 17 24 ..	Sat.	1 8 15 22 29 ..
AUGUST		SEPTEMBER		OCTOBER	
Sun.	6 13 20 27	Sun.	3 10 17 24	Sun.	1 8 15 22 29
Mon.	7 14 21 28	Mon.	4 11 18 25	Mon.	2 9 16 23 30
Tues.	1 8 15 22 29	Tues.	5 12 19 26	Tues.	3 10 17 24 31
Wed.	2 9 16 23 30	Wed.	6 13 20 27	Wed.	4 11 18 25 ..
Thur.	3 10 17 24 31	Thur.	7 14 21 28	Thur.	5 12 19 26 ..
Fri.	4 11 18 25 ..	Fri.	1 8 15 22 29	Fri.	6 13 20 27 ..
Sat.	5 12 19 26 ..	Sat.	2 9 16 23 30	Sat.	7 14 21 28 ..
NOVEMBER		DECEMBER			
Sun.	5 12 19 26	Sun.	3 10 17 24 31		
Mon.	6 13 20 27	Mon.	4 11 18 25 ..		
Tues.	7 14 21 28	Tues.	5 12 19 26 ..		
Wed.	1 8 15 22 29	Wed.	6 13 20 27 ..		
Thur.	2 9 16 23 30	Thur.	7 14 21 28 ..		
Fri.	3 10 17 24 ..	Fri.	1 8 15 22 29 ..		
Sat.	4 11 18 25 ..	Sat.	2 9 16 23 30 ..		

1917		CALENDAR		1917	
JANUARY		FEBRUARY		MARCH	
Sun.	7 14 21 28	Sun.	4 11 18 25	Sun.	4 11 18 25
Mon.	1 8 15 22 29	Mon.	5 12 19 26	Mon.	5 12 19 26
Tues.	2 9 16 23 30	Tues.	6 13 20 27	Tues.	6 13 20 27
Wed.	3 10 17 24 31	Wed.	7 14 21 28	Wed.	7 14 21 28
Thur.	4 11 18 25 ..	Thur.	1 8 15 22 ..	Thur.	1 8 15 22 29
Fri.	5 12 19 26 ..	Fri.	2 9 16 23 ..	Fri.	2 9 16 23 30
Sat.	6 13 20 27 ..	Sat.	3 10 17 24 ..	Sat.	3 10 17 24 31
APRIL		MAY		JUNE	
Sun.	1 8 15 22 29	Sun.	6 13 20 27	Sun.	3 10 17 24 ..
Mon.	2 9 16 23 30	Mon.	7 14 21 28	Mon.	4 11 18 25 ..
Tues.	3 10 17 24 ..	Tues.	1 8 15 22 29	Tues.	5 12 19 26 ..
Wed.	4 11 18 25 ..	Wed.	2 9 16 23 30	Wed.	6 13 20 27 ..
Thur.	5 12 19 26 ..	Thur.	3 10 17 24 31	Thur.	7 14 21 28 ..
Fri.	6 13 20 27 ..	Fri.	4 11 18 25 ..	Fri.	1 8 15 22 29 ..
Sat.	7 14 21 28 ..	Sat.	5 12 19 26 ..	Sat.	2 9 16 23 30 ..
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Mon.	5 12 19 26	Mon.	3 10 17 24 31		
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Thur.	1 8 15 22 29	Thur.	6 13 20 27 ..		
Fri.	2 9 16 23 30	Fri.	7 14 21 28 ..		
Sat.	3 10 17 24 ..	Sat.	1 8 15 22 29 ..		

CALENDAR 1916-1917.

- 1916—Sept. 1 Applications for Registration received.
Last day for receiving applications for Supplemental Examinations.
19 Supplemental Examinations begin.
25 Meeting of Faculty Council.
26 Enrolment.
26 First Term begins.
Last day for receiving Vacation Work.
President's address to students at 3 p.m.
- Oct. 6 Meeting of Faculty Council.
18 Meeting of Engineering Society.
- Nov. 1 Meeting of Engineering Society.
3 Meeting of Faculty Council.
15 Meeting of Engineering Society.
29 Meeting of Engineering Society.
- Dec. 1 Meeting of Faculty Council.
13 Meeting of Engineering Society.
22 First Term ends at 12 noon.
- 1917—Jan. 9 Second Term begins.
Last day for receiving Theses for B.A.Sc.
12 Meeting of Faculty Council.
17 Meeting of Engineering Society.
31 Meeting of Engineering Society.
- Feb. 2 Meeting of Faculty Council.
14 Meeting of Engineering Society.
28 Meeting of Engineering Society.
- Mar. 2 Meeting of Faculty Council.
14 Meeting of Engineering Society.
16 Annual elections of Engineering Society.
28 Annual Meeting of Engineering Society.
- April 5 Meeting of Faculty Council.
Lectures and practical work close.
Annual Examinations begin.
6 Good Friday—Building closed.
- May 4 Meeting of Faculty Council.
- June 8 Annual Commencement.

The buildings will be closed on all public holidays and daily at noon during July and August.

University of Toronto.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

President.....R. A. FALCONER, LL.D., D.Litt., C.M.G.
Dean of Faculty.....W. HODGSON ELLIS, M.A., M.B.
Secretary of Faculty.....A. T. LAING, B.A.Sc.
Bursar.....F. A. MOURÉ, Esq.

G. R. ANDERSON, M.A., <i>Associate Professor of Physics.</i>	534 Palmerston Ave.
R. W. ANGUS, B.A.Sc., Mem. Am. Soc. M.E. <i>Professor of Mechanical Engineering.</i>	42 Howland Ave.
E. G. R. ARDAGH, B.A.Sc., <i>Assistant Professor of Analytical Chemistry.</i>	Chem. & Mining Bldg.
J. W. BAIN, B.A.Sc., <i>Associate Professor of Applied Chemistry.</i>	393 Brunswick Ave.
M. C. BOSWELL, M.A., Ph.D., <i>Assistant Professor of Organic Chemistry.</i>	Walsingham Apts.
J. R. COCKBURN, B.A.Sc., A.M. Can. Soc. C.E., <i>Assistant Professor of Descriptive Geometry</i>	100 Walmer Rd.
S. R. CRERAR, B.A.Sc., D.L.S., <i>Lecturer in Surveying.</i>	122 Grenadier Rd.
W. HODGSON ELLIS, M.A., M.B., <i>Professor of Applied Chemistry.</i>	74 St. Alban St.
P. GILLESPIE, M.Sc., C.E., M. Can. Soc. C.E., <i>Associate Professor of Applied Mechanics.</i>	358 Davenport Rd.
G. A. GUESS, M.A., <i>Professor of Metallurgy.</i>	Oakville.
H. E. T. HAULTAIN, C.E., M.I.M.M., <i>Professor of Mining Engineering.</i>	63 Heath St.
A. T. LAING, B.A.Sc., <i>Assistant Professor of Applied Mechanics.</i>	146 Balmoral Ave.
T. R. LOUDON, B.A.Sc., <i>Assistant Professor of Ferro-Metallurgy.</i>	189 Sheldrake Blvd.
A. WELLESLEY McCONNELL, B.A.Sc., <i>Assistant Professor of Architecture.</i>	171 Spadina Rd.
J. MCGOWAN, B.A., B.A.Sc., <i>Associate Professor of Applied Mechanics.</i>	Engineering Building.
H. W. PRICE, B.A.Sc., <i>Associate Professor of Electrical Engineering.</i>	474 Palmerston Ave.
T. R. ROSEBRUGH, M.A., <i>Professor of Electrical Engineering.</i>	92 Walmer Rd.
L. B. STEWART, O.L.S., D.T.S., <i>Professor of Surveying & Geodesy.</i>	161 Admiral Rd.

J. J. TRAILL, B.A.Sc., <i>Lecturer in Hydraulics.</i>	53 Fulton Ave.
W. M. TREADGOLD, B.A., <i>Assistant Professor of Surveying.</i>	13 Woodlawn Ave. E.
C. H. C. WRIGHT, B.A.Sc., Mem. O.A.A., <i>Professor of Architecture.</i>	419 Markham St.
C. R. YOUNG, B.A.Sc., C.E., M. Can. Soc. C.E., <i>Assistant Professor of Structural Engineering.</i>	98 Hilton Ave.

Sessional Appointments.

R. J. ALLEN, B.A.Sc., <i>Demonstrator in Electrical Engineering.</i>	325 Davenport Rd.
L. M. ARKLEY, M.Sc., M. Can. Soc. C.E., <i>Lecturer in Mechanical Engineering.</i>	61 Indian Rd. Crescent
L. A. BADGLEY, B.A.Sc., <i>Demonstrator in Drawing.</i>	1055 Bathurst St.
J. L. BANKS, <i>Instructor in Modelling.</i>	176 Kingston Rd.
E. W. BANTING, B.A.Sc., <i>Lecturer in Surveying.</i>	330 St. George St.
H. BROWNLEE, B.A. (Kansas Univ.), <i>Demonstrator in Electrochemistry.</i>	47 Howland Ave.
W. B. BUCHANAN, B.A.Sc., <i>Demonstrator in Electrical Engineering.</i>	484 Euclid Ave.
J. T. BURT-GERRANS, B.A., Phm.B., <i>Lecturer in Electrochemistry.</i>	46 Dewson St.
J. DIBBLEE, B.A.Sc., <i>Demonstrator in Hydraulics.</i>	101 Dewson St.
A. R. DUFF, <i>Fellow in Chemistry.</i>	211 Fern Ave.
F. C. DYER, B.A.Sc., <i>Lecturer in Mining Engineering.</i>	358 Conduit St.
W. S. FERGUSON, C.A., <i>Lecturer in Accountancy.</i>	52 Tranby Ave.
J. S. GALBRAITH, B.A.Sc., <i>Demonstrator in Drawing.</i>	9 Rowanwood Ave.
W. S. GUEST, B.A.Sc., <i>Lecturer in Electrical Engineering.</i>	30 McMaster Ave.
J. T. HOWARD, B.A.Sc., <i>Demonstrator in Drawing.</i>	223 St. Clements Ave.
C. W. JEFFERYS, A.R.C.A., Mem. O.S.A., <i>Instructor in Freehand Drawing.</i>	York Mills
J. T. KING, B.A.Sc., <i>Lecturer in Mining Engineering.</i>	446 Indian Grove Ave.

J. T. LAGERGREN, M.E., <i>Lecturer in Machine Design.</i>	148 Carlton St.
MISS J. C. LAING, B.A., <i>Instructor in French.</i>	16 Appleton Ave.
H. M. LANCASTER, B.A.Sc., <i>Lecturer in Sanitary Chemistry.</i>	22 Palmerston Gardens
J. M. LYLE, <i>Instructor in Architectural Design.</i>	19 Avondale Rd.
H. H. MADILL, B.A.Sc., Mem. O.A.A., <i>Demonstrator in Architecture.</i>	23 Grange Rd.
R. J. MARSHALL, B.A.Sc., <i>Demonstrator in Applied Mechanics.</i>	11 Glenholme Ave.
W. H. MARTIN, B.A.Sc., <i>Demonstrator in Drawing.</i>	649 Euclid Ave.
F. C. MECHIN, <i>Demonstrator in Drawing.</i>	Eng. Bldg.
J. S. MITCHELL, B.A.Sc., <i>Demonstrator in Applied Mechanics.</i>	602 Palmerston Ave.
J. H. PARKIN, B.A.Sc., <i>Lecturer in Mechanical Engineering.</i>	10 Columbine Ave.
J. W. PICKUP, <i>Lecturer in Accountancy.</i>	85 Dearbourne Ave.
J. T. RANSOM, B.A.Sc., D.L.S., O.L.S., <i>Demonstrator in Surveying.</i>	Parkdale Mansions
L. J. ROGERS, B.A.Sc., <i>Demonstrator in Chemistry.</i>	528 Brunswick Ave.
A. C. ROSS, B.A.Sc., <i>Demonstrator in Electrical Engineering.</i>	616 Indian Rd.
L. T. RUTLEDGE, B.A.Sc., A.M., Can. Soc. C.E., <i>Demonstrator in Drawing.</i>	320 Concord Ave.
W. J. SMITHER, B.A.Sc., A.M. Can. Soc. C.E., <i>Demonstrator in Drawing.</i>	10 Pensax Court
R. TAYLOR, B.A.Sc., <i>Demonstrator in Electrical Engineering.</i>	2 Indian Grove
D. J. THOMSON, <i>Demonstrator in Mechanical Engineering.</i>	113 Gothic Ave.
G. L. WALLACE, B.A.Sc., <i>Demonstrator in Physics.</i>	58 Parkway Ave.
F. E. WATSON, B.A.Sc., <i>Demonstrator in Drawing.</i>	330 Clinton St.
A. C. WILSON, B.A.Sc., <i>Fellow in Physics.</i>	283 Evelyn Ave.
W. J. T. WRIGHT, B.A.Sc., <i>Demonstrator in Drawing.</i>	419 Markham St.
A. R. ZIMMER, B.A.Sc., <i>Lecturer in Electrical Engineering.</i>	32 Delaware Ave.

MEMBERS OF OTHER FACULTIES GIVING INSTRUCTION TO STUDENTS IN APPLIED SCIENCE.

F. B. ALLAN, M.A., Ph.D., <i>Associate Professor of Organic Chemistry.</i>	380 Brunswick Ave.
ALFRED BAKER, M.A., <i>Professor of Mathematics.</i>	81 Madison Ave.
B. A. BENSLEY, B.A., Ph.D., <i>Professor of Zoology.</i>	316 Brunswick Ave.
C. A. CHANT, M.A., Ph.D., <i>Associate Professor of Astro-Physics</i>	201 Madison Ave.
A. P. COLEMAN, M.A., Ph.D., <i>Professor of Geology.</i>	476 Huron St.
A. T. DELURY, M.A., <i>Professor of Mathematics.</i>	University of Toronto
J. H. FAULL, B.A., Ph.D., <i>Associate Professor of Botany.</i>	102 Yorkville Ave.
J. G. FITZGERALD, M.B., <i>Associate Professor of Hygiene.</i>	186 Balmoral Ave.
A. G. HUNTSMAN, B.A., M.B., <i>Lecturer in Biology.</i>	210 Fern Ave.
W. J. LOUDON, B.A., <i>Professor of Mechanics.</i>	133 Walmer Rd.
M. A. MACKENZIE, M.A., F.I.A., <i>Professor of Mathematics.</i>	1 Bellwoods Park
W. L. MILLER, B.A., Ph.D., <i>Professor of Physical Chemistry.</i>	50 St. Alban St.
G. H. NEEDLER, B.A., Ph.D., (Leipsic) <i>Professor of German.</i>	103 Bedford Rd.
W. A. PARKS, B.A., Ph.D., <i>Associate Professor of Geology.</i>	69 Albany Ave.
A. L. PARSONS, B.A., <i>Assistant Professor of Mineralogy.</i>	22 Kendal Ave.
J. SQUAIR, B.A., <i>Professor of French.</i>	368 Palmerston Blvd.
T. L. WALKER, M.A., Ph.D., <i>Professor of Mineralogy and Petrography.</i>	62 Maple Ave.
E. M. WALKER, B.A., M.B., <i>Lecturer in Zoology.</i>	67 Alcina Ave.
J. S. WILL, <i>Associate Professor of French.</i>	28 Ranleigh Ave.

Sessional Appointments.

J. G. BEATTY, B.A., <i>Fellow in Mathematics.</i>	12 Major St.
S. BEATTY, M.A., <i>Lecturer in Mathematics.</i>	22 Alvin Ave.
H. V. ELLSWORTH, M.A., <i>Fellow in Mineralogy.</i>	73 Tranby Ave.
A. J. FOERSTER, B.A., <i>Fellow in Mathematics.</i>	242 Major St.
A. C. HAZEN, B.A., <i>Fellow in Geology.</i>	
A. MACLEAN, B.A., <i>Lecturer in Geology.</i>	102 College St.
I. R. POUNDER, B.A., <i>Lecturer in Mathematics.</i>	239 Carlton St.
J. E. THOMSON, B.A.Sc., <i>Lecturer in Mineralogy</i>	57 Queen's Park
J. B. WALLACE, <i>Lecturer in French.</i>	3 Russell St.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.**Historical Sketch.**

The Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practical Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By the terms of this order the management and discipline of the School was vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degrees in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

By the University Act, 1906, the School of Practical Science was united to the University of Toronto as its Faculty of Applied Science and Engineering.

GRADUATING DEPARTMENTS.

There are eight regular Departments of Instruction leading to the degree of Bachelor of Applied Science:—

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical Engineering.
8. Metallurgical Engineering.

The instruction given in these departments extends over a period of four years and is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such training as may make him immediately useful when he commences professional work.

DEGREE OF MASTER OF APPLIED SCIENCE (M.A.Sc.).

(For requirements, see page 74.)

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem. E.), as the case may be, subject to the rules and regulations established by the University. (See page 74.)

FELLOWSHIPS.

Fellowships of the value of \$500 each, open to graduates, are offered annually in the various departments.

Applications for these fellowships are to be made annually in writing to the Secretary of the Faculty on or before the 1st day of May.

SCHOLARSHIPS.

The Boiler Inspection and Insurance Company of Canada offers a Scholarship in the Department of Mechanical Engineering of the value of \$130.00 to the student who obtains highest Honour Standing in the regular examinations of the third year.

The successful candidate will be expected to proceed to his fourth year during the session next following the date of the award.

The amount of the award will be credited by the Bursar to the fees of the fourth year of the successful candidate.

Research Fellowship.

Two research Fellowships of the value of \$500 each are offered annually by the Alumni Association of the Faculty of Applied Science and Engineering.

I. MATRICULATION.

1. The matriculation requirements of this Faculty are based upon those given in the curriculum for Junior Matriculation, a copy of which may be obtained on application.

2. A candidate for matriculation must produce satisfactory certificates of good character.

3. The subjects are as follows:

English, History, any three of the following, viz., Greek, Latin, French, German, Experimental Science, with pass standing in Honour Mathematics.

In selecting the options it is recommended that students take French, German and Experimental Science. In the department of Architecture French is required, in Applied Chemistry and Chemical Engineering German is required, and in Mechanical Engineering it is desirable that students take German.

4. The pass standard is forty per cent. of the marks assigned to a paper, with an average of sixty per cent.

5. A candidate who has obtained an average of sixty per cent. on all the papers but has failed to obtain forty per cent. in not more than two papers may complete matriculation by passing on these papers at any one subsequent examination.

6. A candidate who has obtained forty per cent. on each of at least eight papers, with an average of sixty per cent. on the same, will be credited with these papers. In order to complete his Matriculation, he must obtain at one subsequent examination forty per cent. on each of the remaining papers, with an average of sixty per cent.

7. The examination for pass and honour Junior Matriculation is held annually in June at centres in Ontario, and, if application is made to the Senate, the examination may, with the co-operation of the Department of Education, be held at centres outside Ontario.

8. Applications accompanied by the fee of \$5.00 must be sent not later than the 15th of May to the local Public School Inspector, or in the case of candidates intending to write at the University, to the Registrar.

9. A Junior Matriculation examination, at which no honour papers are set, will be held in September at the University and at such other centres as may from time to time be authorized. Candidates entitled to the privileges of supplemental examinations, as well as new candidates, may present themselves at this examination.

10. Applications to write on the September examination, together with the necessary fee, must be received at the Department of Education not

later than September 1, for those who wish to write at any centre established in Ontario, and not later than August 1 for any centre elsewhere in Canada.

11. Forms of application, the time-table of the September examination, and further particulars may be had upon application to the Department of Education.

II. ADMISSION.

A candidate for admission must have completed the seventeenth year of his age on or before the first of October of the year in which he seeks to enter.

Applications for admission must be made on blank forms supplied by the Registrar, and should be forwarded early in September.

Applications will be considered from (a) those who have completed matriculation, including those who hold certificates recognized as equivalent—see matriculation curriculum—, (b) those who have failed in not more than two papers of the matriculation examination. The latter must complete matriculation before being eligible to enter the second year.

Applications based upon other certificates than those mentioned will be considered as occasion may require. Such certificates must be accompanied by an official statement of the marks in the various subjects upon which the certificate was granted.

ADMISSION AD EUNDEM STATUM.

An undergraduate of another University may be admitted *ad eundem statum* on such conditions as the Senate on the recommendation of the Council of the Faculty may prescribe.

An applicant for admission *ad eundem statum* must submit with his petition (1) a calendar of his University giving a full statement of the courses of instruction; (2) an official certificate of character and academic standing.

III. REGISTRATION.

Registration in the various years will begin Sept. 1st Blank cards for the purpose will be supplied by the Secretary on request. (See "Dues and Deposits," next page.)

IV. FEES.

All fees are payable at the Bursar's office between the hours 10 a.m. and 1 p.m. of each week day except Saturday.

The annual fees including tuition, library, laboratory supplies and one annual examination shall be as follows:

First Year.

If paid in full on or before November 5th.....	\$100.00
By instalments:	
First instalment, if paid on or before November 5th.....	50.00
Second instalment, if paid on or before February 5th.....	55.00

Second Year.

If paid in full on or before November 5th.....	\$110.00
By instalments:	
First instalment, if paid on or before November 5th.....	55.00
Second instalment, if paid on or before February 5th.....	60.00

Third and Fourth Years.

If paid in full on or before November 5th.....	\$120.00
By instalments:	
First instalment, if paid on or before November 5th.....	60 00
Second instalment, if paid on or before February 5th.....	65.00

Repeating the Year.

If paid in full on or before November 5th.....	\$50.00
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The above fees are payable in advance. After November 5th a penalty of \$1.00 per month will be imposed until the whole amount is paid. In the case of payment by instalments the same rule as to penalty will apply.

Students desiring to pay in instalments must have paid the fees due in the first term before proceeding to the work of the second term.

General Fees.

Matriculation, or registration of Matriculation.....	\$ 5.00
Supplemental examination.....	10.00
Admission <i>ad eundem statum</i>	10.00
Degree of B.A.Sc. (payable not later than April 1st).....	10.00
Degree of M.A.Sc.....	25.00

Dues and Deposits.

(Payable to the Secretary of the Faculty at the time of registration.)

Engineering Society membership.....	\$2.00
Annual deposit.....	2.00

Charges for waste, neglect and breakage are to be met out of the deposit fee, the balance of which will be refunded to the student at the end of the session.

Students' Council Fee.

The Annual Fee.....	\$2.00
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Every male student in attendance, proceeding to the Degree of Bachelor of Applied Science and Engineering, is required to pay to the Bursar, at the time of the entry of his name with the Secretary, the Annual Fee of two dollars, for the maintenance of the Council of the Undergraduates.

GENERAL INFORMATION FOR STUDENTS.

The Council of University College and the governing bodies of the federated universities and colleges, respectively, have disciplinary jurisdiction over and entire responsibility for the conduct of their students in respect of all matters arising or occurring in or upon their respective college buildings and grounds, including residences.

The councils of such of the faculties as have assigned for their separate use any building or buildings and grounds, including residences, have disciplinary jurisdiction over and entire responsibility for the conduct of all students in their respective faculties in respect of all matters arising or occurring in or upon such building, or buildings and grounds.

In all such cases, and, save as aforesaid, as respects all students to whatsoever college or faculty they may belong, disciplinary jurisdiction is vested in the Caput, but the Caput may delegate its authority in any particular case or by any general regulation to the council or other governing body of the university or college or faculty to which the student belongs.

The Caput has also power and authority to determine by general regulations, or otherwise, to what college, faculty or other body the control of university associations belongs.

If there be any questions as to the proper body to exercise jurisdiction in any matter of discipline which may arise, the same shall be determined by the Caput, whose decision shall be final.

Disciplinary jurisdiction includes the power to impose fines.

REGULATIONS RESPECTING STUDENTS.

No student will be enrolled in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Council to be prejudicial to the interests of the University.

All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council. In particular, students of all Faculties are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles". Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

Any student who may be convicted of having taken part in processions through the city, which have not been authorized by the police authorities after application by the Executive of the Students' Council, will be severely disciplined.

All students shall be in attendance during the whole of each term. Those whose attendance or work is reported as unsatisfactory are liable to dismissal by the Council.

No student will be allowed to repeat the work of any year more than once.

Information as to the text-books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

OPTIONS.

In departments 1, 2, 3 and 7 of the first and second years, students have the option of taking either French or German. The selection made for the first year must be continued during the second year.

In department 5, second year, an option is permitted between Biology and Calculus as the student, upon consultation with the head of the department in Chemistry, may decide.

In the fourth year, optional courses are arranged in certain departments. Students are required to submit their selection to the Secretary in writing, not later than September 15th. The proposed selection must be approved by Council before adoption.

REGULATIONS RESPECTING EXAMINATIONS.

Regular Examinations.

A student who in either term of the session fails to perform the work of his course in a manner satisfactory to the professors in charge, will not be allowed to present himself at the final examinations of the year.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the annual examinations in April, notice in writing of their intention to take such examinations. A penalty of \$1.00 will be imposed upon all candidates who fail to give notice within the proper time.

In the second, third and fourth years annual examinations will be held at the beginning of the second term on all subjects completed during the first term.

No student will be allowed to write at the annual examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examination will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, electrical design, optics, surveying and architecture, the drawings set in these subjects must be made.

Candidates who fail in passing the annual examinations will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

Term Examinations.

In the first year only, term examinations in three subjects will be held on the last two days of the first term.

The subjects will not be announced until the day previous to the first examination.

The results of these examinations will be incorporated with those of the annual examinations in the same subjects in the ratio of 1 to 2.

Supplemental Examinations.

A candidate who fails in one or two subjects at the Annual Examinations will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 19th of September, 1916. Candidates are required to send to the Secretary of the Faculty not later than the first of September, notice in writing of their intention to take such examinations, and to remit to the Bursar the fee of \$10.00. A penalty of \$1.00 will be imposed upon all candidates who fail to give notice within the time stated.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Vacation Work.

Vacation work must be handed in on or before the first day of the session.

Vacation notes must be on construction only, except in Department 2 (see p. 74), and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be freehand pencil drawings with figured dimensions.

Notes must be made in standard note books approved of by the Faculty. Notes which have been taken during the session in connection with the work in drawing will not count as vacation work.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

Shop Work.

Students in Mechanical and Electrical Engineering are not considered as having completed their course of study, nor are degrees granted until certificates have been submitted to the Council, and accepted as satisfactory, showing not less than eight months of mechanical experience in production of some kind under commercial conditions. Preferably the work undertaken should be in one of the manufacturing industries or trades with which the Course is related.

It is not desirable that any student in these Courses should enter sales or other non-production departments of the engineering industries without having acquired some personal experience in mechanical production. It is best to obtain this experience under commercial conditions. Otherwise one can not at all appreciate shop conditions and limitations.

Honours.

Honours will be granted in each department to the students who obtain at least 40 per cent. in each subject, and 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Honour Graduate standing will be granted to those who obtain honours in the final and in one previous year.

REGULATIONS RESPECTING TERM WORK.

Students working in any laboratory must be governed by the regulations relating thereto as made known from time to time.

No laboratory reports or drawings may be removed from the laboratories without permission. The Council reserves the right to dispose of them as may be thought proper.

Field Work.

No field notes will be counted which have not been taken in the field and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

Drafting Rooms.

Drawings prescribed for the first term of the session will not be counted unless finished in that term.

The minimum number of drawings in first and second years shall be twenty-five, and the maximum number thirty-five, except in the Department of Analytical and Applied Chemistry, in which the number shall be fifteen and twenty-five respectively.

No drawings will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

Theses.

In the Fourth Year each student is required to prepare a thesis on a subject approved by the Council. The title of the thesis must be sent to the Secretary of the Faculty for approval on or before November 1st, and the completed thesis must be handed in not later than the first day of the second term and shall become the property of the University. The rules governing size, form, etc., may be obtained on application to the Secretary.

EXEMPTIONS.

Applications for exemption from any of the regulations must be made to the Council in writing and the particulars of the case fully stated.

DEPARTMENT OF CIVIL ENGINEERING.

The courses of study in Civil Engineering are designed to give the student a sound training in the fundamental scientific principles on which the practice of the profession is based. The instruction is given by means of lectures and practical work in the field, the drafting room and the laboratory. In this way the student is led to apply the principles developed in the class room.

SUBJECTS OF INSTRUCTION.

Civil Engineering—First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying.....	205, 206	1	9	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry.....	75	2		2	
Modern Language.....	217, 218	1		1	
Accounts.....	65	1		1	
Drawing.....	117		13		22

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Spherical Trigonometry.....	191	1			
Elementary Astronomy.....	55	1		1	
Descriptive Geometry.....	121	1		1	
Surveying.....	207, 208	1	9	1	
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Optics.....	197	1	1½		
Hydrostatics.....	196			1	1½
Engineering Chemistry.....	85			1	
Organic Chemistry.....	87	1			
Mineralogy.....	159, 161	2	1		2
Banking and Finance.....	66	1		1	
Modern Language.....	217, 218	1		1	
Drawing.....	123		12		16
Chemical Laboratory.....	81				6

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y
Vacation Work.....	220				
Least Squares.....	192			1	
Practical Astronomy and Geodesy.....	56, 57	2		2	
Surveying and Levelling....	209, 210	1	9	1	
Descriptive Geometry.....	127	1			
Hydraulics.....	29, 30	2		2	3
Photography.....	199	1	1½		1½
Ferro-Metallurgy.....	181	1		1	
Theory of Structures.....	18	2		2	
Cements and Concrete.....	21			1	
Engineering Chemistry....	94	1		1	
Geology.....	150	1		1	
Limited Companies.....	67	1		1	
Heat.....	198	1	1½		
Strength of Materials.....	14				2
Drawing.....	128		8		19

Fourth Year.

†Foundations.....	20	1	1	1	1
Electricity.....	140	1		1	
†Thermodynamics.....	34, 39a	1		1	2
Economic Geology.....	151	1		1	
Contracts and Specifications	68			1	
Thesis.....	219				
And one of					
(a) { Astronomy.....	58, 59	2	23	2	
{ Geodesy.....	60	2		2	23
(b) { Sanitary Engineer- ing.....	213	1½	16	1½	16
{ Highway Engineer- ing.....	214	1	6	1	6
(c) Structural Engineer- ing.....	215	6	22	7	22
(d) Strength of Materials	16, 17, 22, 23	3½	11	3½	11
with either :					
(1) Hydraulics.....	31, 31a, 32	3	10	3	10
or					
(2) Railway Engineering.	211, 212	2	11	2	11

† Not required of those taking the Astronomy option.

2. DEPARTMENT OF MINING ENGINEERING.

The course in Mining Engineering is intended to serve as a preliminary training for those who expect to practise the art of mining or metallurgy. In the first two years it differs very little from the course in civil engineering, in the third year some subjects peculiar to mining and metallurgy are taken up.

In general this course is designed to first give the student a good training in the parts of engineering essential to all branches, such as surveying, drafting, etc., and then in the upper years to allow him to follow studies peculiar to mining engineering.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least six months' practical experience in work connected with mining, metallurgy or geology, for which they must have received regular wages. Certificate forms, giving full details as to acceptable classes of work, will be furnished on application, and should be obtained by all students before entering employment.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying.....	205, 206	1	9	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry.....	75	2		2	
Modern Languages.....	217, 218	1		1	
Accounts.....	65	1		1	
Drawing.....	117		13		19
Chemical Laboratory.....	76				3

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	121	1		1	
Surveying.....	207, 208	1	9	1	
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Optics.....	197	1	1½		
Hydrostatics.....	196			1	1½
Inorganic Chemistry.....	79	1			
Organic Chemistry.....	87	1			
Engineering Chemistry.....	85			1	
Mineralogy.....	157, 160	2	1		3
Geology.....	150	1		1	
Mining.....	170, 171	1	3		
Metallurgy	183			1	
Modern Languages.....	217, 218	1		1	
Banking and Finance.....	66	1		1	
Drawing.....	123		7		7
Chemical Laboratory.....	81, 82				12

Mining Engineering—Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work.....	220				
Surveying and Levelling....	209, 210	1	9		
Theory of Structures.....	19	2			
Hydraulics.....	29a	2		2	
Electricity.....	140	1		1	
Engineering Chemistry.....	94	1		1	
Analytical Chemistry.....	80	1		1	
Assaying.....	173	1	3		3
Petrography.....	163	1		1	
Mineralogy.....	164		2		2
Economic Geology.....	151, 156	1		2	2
Ore Deposits.....	155	1		1	
Mining.....	172			2	3
Ore Dressing.	177	1		1	
Ferro-Metallurgy.....	181	1		1	
Metallurgy.....	184	1		1	
Limited Companies.....	67	1		1	
Drawing.....	132		9		2
Chemical Laboratory.....	93				11

Fourth Year.

Thermodynamics.....	34	1		1	
Electrochemistry.....	101	2			
Assaying.....	174			1	3
Petrography.....	165, 166	1	2	1	2
Geology, Archaean and Glacial.....	152	2	1	2	
Geology, Mining.....	153	1		1	
Mining.....	175	1		1	
Ore Dressing.....	179	1		1	
Metallurgy.....	180, 182	1			6
Cost-keeping, etc.....	70	1		1	
Milling.....	176				6
Power.....	32a, 39a, 141		3		3
Design.....	215		3		3
Chemical Laboratory.....	112		12		
Thesis.....	219		7		2

3. DEPARTMENT OF MECHANICAL ENGINEERING.

The course in this Department is designed to meet the needs of those students who are intending to take up the work connected with Mechanical Engineering, such as the design of gas engines, steam engines, steam boilers, steam turbines, air compressors, etc.; the design and installation of the machinery connected with power plants and central stations, steam piping and other similar problems. The work is also so arranged that the student becomes somewhat familiar with the design of travelling cranes and mill buildings and similar problems connected with structural steel work.

Since the work of the mechanical engineer and of the electrical engineer is closely allied, the courses in these two departments in the first two years are identical and cover the subjects mentioned below.

In the third year the work becomes more specialized, the mechanical engineers paying more attention to heat engines of various types, and to mill building design and other work of similar nature. The study of electricity is continued and the student gets considerable practice in the mechanical and electrical laboratories.

In the fourth year the student devotes himself still more closely to his chosen work, placing the greater stress on thermodynamics and the theory and testing of heat engines, and problems in machine design. Much time is spent in the mechanical laboratories testing gas and steam engines and other machines.

Before receiving the degree in this department candidates are required to present satisfactory evidence of having had at least eight months' practical experience in one of the principal trades connected with Mechanical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering, as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.

Mechanical Engineering—First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Magnetism and Electricity.	135	2			
Electric Circuits.....	136			2	
Elementary Chemistry....	75	2		2	
Drawing.....	120		20		20
Electricity.....	137		1½		1½
Modern Language.....	217, 218	1		1	
Accounts.....	65	1		1	

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	121	1		1	
Dynamics.....	12	1		1	
Theory of Mechanism.....	25	2		2	
Steam Engines.....	38	1			
Strength of Materials.....	13	2		2	
Optics.....	197	1	1½		
Hydrostatics.....	196			1	1½
Electricity.....	138, 139	2	2½	2	2½
Engineering Chemistry....	85			1	
Organic Chemistry.....	87	1			
Banking and Finance.....	66	1		1	
Modern Language.....	217, 218	1		1	
Drawing.....	123		12		19
Chemical Laboratory.....	81		6		
Machine Details.....	28a			1	

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work.....	220				
Mechanics of Machinery...	26	1		1	
Machine Design.....	27	1	7½	1	7½
Thermodynamics.....	33, 35	2	2	2	3
Heat Engines.....	39	1		1	
Hydraulics.....	29, 30	2		2	1
Theory of Structures.....	19	2			
Ferro-Metallurgy.....	181	1		1	
Magnetism and Electricity.	144, 142	2	4½	2	4½
Alternating Current.....	143	1		1	
Engineering Chemistry.....	94	1		1	
Limited Companies.....	67	1		1	
Strength of Materials.....	14		2		
Drawing.....	132		9		

Fourth Year.

Mill Building Design.....	24	1	3	1	3
Cost-keeping, etc.....	69	1		1	
Machine Design.....	28	1	4	1	4
Thesis.....	219				
And two of					
(d) Hydraulics.....	31, 31a, 32	3	9	3	9
(e) Strength of Materials	16, 17, 22, 23	3½	10	3½	10
(g) Thermodynamics....	36, 36a, 37	3	10	3	10

4. DEPARTMENT OF ARCHITECTURE

The instruction in this department is arranged to lay a broad foundation for the subsequent professional life of its graduates, and incidentally to prepare its students to be immediately useful in an architect's office. The curriculum has been arranged to meet the aesthetic and scientific needs of the profession, and includes History and Principles of Architecture, Free-hand Drawing in pencil, ink and color, Modelling, Architectural Design, Analysis and Criticism of Buildings, Mathematics, Statics, Strength and Elasticity of Materials, Theory of Construction and Heating and Ventilation.

The equipment of the department includes a working library of 1,000 volumes, a large file of periodicals, 2,500 photographs, 2,000 stereographic photos, 4,500 lantern slides, and a large collection of models and casts.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	116	1		1	
Building Measurement.....	52	1	9	1	
Statics.....	10	2		2	
Elementary Chemistry	75	2		2	
History and Principles of Architecture.....	40	1	3	1	
French.....	217	1		1	
Accounts.....	65	1		1	
Drawing.....	118		12		21
Freehand Drawing.....	49		2		2
Modelling.....	50		2		2

Second Year

Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	122	1		1	
Strength of Materials.....	13	2		2	

Second Year—Continued.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Optics and Lighting.....	197 ^a	1	1½		
Illumination.....	200			1	1½
Architectural Design.....	46	1		1	
History of Architecture....	41	1		1	
Orders of Architecture.....	45	1		1	
History of Ornament.....	43	1		1	
French.....	217	1		1	
Banking and Finance.....	66	1		1	
Drawing					
Architectural Design }....	125		20		20
Freehand Drawing... }	49 ^a		2		2
Modelling.....	50 ^a		2		2

Third Year.

Vacation Work.	220				
Descriptive Geometry... .	131				
Acoustics.....	195	1	1½		
History of Architecture....	42	1		1	
History and Principles of Ornament.....	44	1		1	
Architectural Design.....	47	1		1	
Building Materials.....	53	2		2	
Theory of Structures.....	19	2			
Cements and Concrete.....	21			1	
Limited Companies.....	67	1		1	
Strength of Materials.....	14				2
Photography.....	199	1	1½		1½
Modelling.....	50 ^b		2		2
Water Color Painting.....	49 ^b		2		2
Drawing			9		
Architectural Design }....	130		7		25

Fourth Year.

Strength of Materials.....	22	1		1	6
Structural Design.....	51	1	1	1	1
Electricity.....	140	1		1	
Heating and Ventilating....	54 ^a	1		1	
Sanitary Science.....	54	1		1	
Contracts and Specifications	68			1	
Thesis.....	219		3		3
Drawing from life.....	49 ^c		2		2
Modelling from life.....	50 ^c		2		2
And one of					
(l) Architectural Design.	48	2	20	2	20
(m) Architectural Engi- neering.....	216	4	22	3	26

5. DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.

The course in Analytical and Applied Chemistry is designed to furnish instruction suitable for those students who intend to practise chemistry as a profession, either as analysts or as works chemists.

SUBJECTS OF INSTRUCTION.
First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Electricity and Magnetism.	135	1		1	
Biology.....	61, 62	2		2	6
Accounts.....	65	1		1	
Electric Circuits.....	136	1		1	
Elementary Chemistry.....	75	2		2	
Elementary Mineralogy....	157	2			
Inorganic Chemistry.....	77			1	
German.....	218	1		1	
Drawing.....	119		4		4
Electrical Laboratory.....	137	1½	1	1½	
Chemical Laboratory.....	78		10		14
Mineralogical Laboratory...	158		4		3

Second Year.

Electricity.....	138, 139	2	2½		2½
Engineering Chemistry.....	85			1	
Industrial Chemistry.....	86	1		1	
Organic Chemistry.....	88	2		2	
Physical Chemistry.....	90	2		2	
Inorganic Chemistry.....	79	1			
Analytical Chemistry.....	80	1		1	
Optics.....	197	1	1½		
Hydrostatics.....	196			1	1½
Geology.....	150	1		1	
*Biology or {	63				3
Calculus {	190	2		2	
German.....	218	1		1	
Banking and Finance.....	66	1		1	
Chemical Laboratory.....	89		15		16
Metallurgy.....	183			1	
Mineralogical Laboratory...	162				1

* Students should consult the head of the Department of Chemistry as to the option to be selected.

Third Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Electrochemistry.....	101, 102	2	3		
Engineering Chemistry...	94	1		1	
Industrial Chemistry.....	95	1		1	
Organic Chemistry A.....	97	2		2	
Organic Chemistry B.....	98			1	
Chemical Plant.....	96	1		1	
Ferro-Metallurgy.....	181	1		1	
Metallurgy.....	184	1		1	
Economic Geology.....	151	2		2	
Crystallography.....	167	1		1	
Limited Companies.....	67	1		1	
German.....	218	1		1	
Chemical Laboratory.....	91		16		20
Assaying.....	173		1½		1½
Heat.....	198	1	1½		
Electricity.....	140			1	

Fourth Year.

Inorganic Chemistry.....	103	1	3	1	
Organic Chemistry.....	104	1	15	1	
Cost-keeping, etc...	69	1		1	
German.....	218	1		1	
Thesis.....	219				
And one of					
(h) Electrochemistry.....	108, 109	2	14	2	32
(i) Industrial Chemistry.	106, 107	1	15	1	33
(j) Sanitary and Forensic Chemistry and Bac- teriology.....	64, 110, 111	1	15	2	32
(k) Metallurgy.....	180	2	14	1	33

6. DEPARTMENT OF CHEMICAL ENGINEERING.

In many industries there is a demand for a man who combines the technical knowledge of the mechanical engineer with a knowledge of chemistry. It is to fill this want that the course in Chemical Engineering is designed.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term.	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Magnetism and Electricity.	135				
Electric Circuits.....	136			2	
Elementary Chemistry.....	75	2		2	
Inorganic Chemistry.....	77			1	
German.....	218	1		1	
Accounts.....	5	1		1	
Drawing.....	120		17		19
Electrical Laboratory.....	137		1½		1½
Chemical Laboratory.....	76				3

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Strength of Materials.....	13	2		2	
Electricity.....	138, 139	2	2½	2	2½
Engineering Chemistry....	85			1	
Industrial Chemistry.....	86	1		1	
Organic Chemistry.....	88	2		2	
Physical Chemistry.....	90	2		2	
Inorganic Chemistry.....	79	1			
Optics.....	197	1	1½		
Hydrostatics.....	1 6			1	1½
German.....	218	1		1	
Banking and Finance.....	66	1		1	
Drawing.....	123		13		14
Chemical Laboratory.....	84		6		6
Metallurgy.....	183			1	
Machine Details.....	28a			1	

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term.	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work.....	220				
Theory of Structures.....	19	2			
Thermodynamics.....	33, 35	2	2	2	1½
Electrochemistry.....	101, 102	2	3		
Engineering Chemistry....	94	1		1	
Organic Chemistry A.....	97	2		2	
Organic Chemistry B.....	98			1	
Industrial Chemistry.....	95	1		1	
Analytical Chemistry.....	80	1		1	
Metallurgy.....	184	1		1	
Ferro-Metallurgy.....	181	1		1	
Chemical Plant.....	96	1		1	
Limited Companies.....	67	1		1	
German.....	218	1		1	
Machine Design.....	27	1	4½	1	4½
Assaying.....	173		1½		1½
Electricity.....	140			1	
Drawing.....	132		4		
Chemical Laboratory.....	92		9		13

Fourth Year.

Hydraulics.....	29a	2		2	
Inorganic Chemistry.....	103	1	3	2	
Organic Chemistry.....	104	1	15	1	
Cost-keeping, etc.....	69	1		1	
Power.....	32a, 141		2		2
German.....	218	1		1	
Thesis.....	219				
And one of					
(h) Electrochemistry.....	108	2	10	2	27
(i) Industrial Chemistry.	106, 107	1	11	1	28
(j) Sanitary and Forensic Chemistry and Bac- teriology.....	64, 110, 112	1	11	2	27
(k) Metallurgy.....	180	1	11	1	28

7. DEPARTMENT OF ELECTRICAL ENGINEERING.

The course in Electrical Engineering is arranged to provide preliminary training for those who would follow any of the various lines of activity connected with electrical industry.

The first two years of the course are devoted to fundamental scientific principles, and incidentally more or less of their application to engineering problems in mechanical, civil and electrical work. Many problems are solved in the drafting rooms by graphical methods. The third year includes further theoretical work, more particular attention being given to electrical and mechanical studies in theory, operation and design. The fourth year is devoted to advanced work in alternating current theory and practice combined with similar study in thermodynamics, hydraulics or electrochemistry.

A large amount of laboratory practice is provided, most of which belongs to the third and fourth years. In this last year most of the time is spent in laboratory investigations and studies resulting therefrom.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' mechanical experience in one of the principal trades connected with Electrical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Magnetism and Electricity.	135	2			
Electric Circuits.....	136			2	
Elementary Chemistry.....	75	2		2	
Modern Language....	217, 218	1		1	
Accounts.....	65	1		1	
Drawing.....	120		20		20
Electricity.....	137		1½		1½

Second Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	121	1		1	
Optics.....	197	1	1½		
Hydrostatics.....	196			1	1½
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Theory of Mechanism.....	25	2		2	
Steam Engines.....	38	1			
Electricity.....	138, 139	2	2½	2	2½
Engineering Chemistry....	85			1	
Organic Chemistry.....	87	1			
Modern Language.....	217, 218	1		1	
Banking and Finance.....	66	1		1	
Drawing.....	124		12		19
Chemical Laboratory.....	81		6		
Machine Details	28a			1	

Third Year.

Vacation Work.....	220				
Mechanics of Machinery...	26	1		1	
Machine Design.....	27	1	3½	1	3½
Hydraulics.....	29, 30	2		2	1
Thermodynamics.....	33, 35	2	2	2	1½
Heat Engines.....	39	1		1	
Electrochemistry.....	101, 102	2	3		
Magnetism and Electricity.	142	2		2	
Alternating Current.....	143	1		1	
Electrical Design.....	145	1	1½	1	3
Electrical Laboratory.....	144		6		6
Engineering Chemistry....	94	1		1	
Ferro-Metallurgy.....	181	1		1	
Limited Companies.....	67	1		1	

Fourth Year.

Applied Electricity.....	146, 147	3	18	3	18
Cost-keeping, etc.....	69	1		1	
Thesis.....	219				
And one of.....					
(d) Hydraulics.....	31, 31a, 32	3	10	3	10
(g) Thermodynamics....	36, 36a, 37	3	10	3	10
(h) Electrochemistry.....	108, 109	2	10	2	10

8. DEPARTMENT OF METALLURGICAL ENGINEERING.

The object of this course is to provide instruction and preliminary training for those who intend to become metallurgical engineers. Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' experience in metallurgical work.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Chemistry.....	75, 77	2		3	
Chemical Laboratory.	78		9		9
Accounts.....	65	1		1	
Mineralogy.....	157, 168	2	1		1½
Drawing.....	120		10		10

Second Year.

Calculus.....	190	2		2	
Descriptive Geometry.....	121	1		1	
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Hydrostatics.....	196			1	1½
Electricity.....	140			1	
Steam Engines.....	38	1			
Magnetism and Electricity.	135	2			
Chemistry.....	79, 80, 85	2		2	
Physical Chemistry.	90	2		2	
Banking and Finance.....	66	1		1	
Chemical Laboratory.....	93		11		9
Mineralogy.....	169		1		1
Mining.....	170, 171	1	3	1	
Metallurgy.....	183, 185	1		2	2
Spanish.....		1		1	
Drawing.....	121		7		7

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Theory of Mechanism.....	25	2		2	
Hydraulics.....	29a	2		2	
Theory of Structures.....	19	2			
Limited Companies.....	67	1		1	
Chemical Laboratory . . .	93		5		5
Electrochemistry.....	101, 102	2	3		
Ferro-Metallurgy.....	181	1		1	
Cement and Concrete.....	21			1	
Assaying.....	173	1	3		3
Metallurgy.....	186	1	1	4	7
Mining.....	172			2	3
Ore Dressing.....	177	1		1	
Heat.....	198	1	1½		
Drawing.....			4		

Fourth Year.

Thermodynamics.....	34	1		1	
Heat Engines.....	39	1		1	
Ore Dressing.....		2	2	2	4
Assaying.....	174			1	3
Cost-Keeping.....	70	1		1	
Plant Design.....		1	4	1	4
Power.....	32a, 39a, 141		3		3
Metallurgy.....	186a	2	9	2	9
Thesis.....			4		4

OUTLINE OF COURSES OF INSTRUCTION.

APPLIED MECHANICS.

10. STATICS:—*T. R. Loudon.*

Departments 1, 2, 3, 4, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with forces in a single plane, and concerns chiefly the calculation of tension, compression and shearing stresses in frame structures and solid beams. It also deals with the consideration of problems relating to friction.

11. DYNAMICS:—*J. McGowan.*

Departments 1, 2, 3, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with bodies having motion of translation in one plane; also with relative motion, momentum, work and energy.

Text book:—Tutorial Dynamics—Briggs and Bryan.

12. DYNAMICS OF ROTATION:—*W. J. Loudon.*

Departments 1, 2, 3, 7 and 8, II Year; 1 hour per week; both terms.

This course covers angular motion, including moments of inertia, simple harmonic motion, the pendulum, centres of mass, suspension and percussion, the simple theory of the fly-wheel and the governor.

Text book:—Dynamics of Rotation—Worthington.

13. STRENGTH OF MATERIALS:—*P. Gillespie.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; 2 hours per week; both terms.

In this course the strength and elasticity of materials are mathematically treated. The stresses in such elements of structures as the tie rod, the beam, the strut and the member subjected to shear are investigated and the elementary principles of design established. In the lecture and drafting rooms through numerous problems involving the design of simple beams, columns, riveted connections, etc., these principles are exemplified. The work includes also the discussion of eccentric loading, suddenly applied loads and repeated stresses.

Reference Book:—Mechanics of Materials—Merriman.

14. STRENGTH AND ELASTICITY OF MATERIALS:—*J. McGowan.*

Departments 1, 3 and 4, III Year; 2 hours per week; one term.

This course is intended to give the student an introduction to the experimental study of the strength and elasticity of materials. It is intended that he shall acquire some familiarity with the construction and operation of testing machines and with the properties of the ordinary building materials.

Reference Book:—Laboratory Instructions, Department of Applied Mechanics, U. of T., 1913.

16. THEORY OF STRUCTURES:—*J. McGowan.*

Departments 1 and 3, IV Year; 2 hours per week; both terms.

The work taken up in this course of lectures consists in swing bridges, arches, suspension bridges and some special features in column construction.

Reference Books:—Modern Framed Structures—Johnson. Typical Steel Railway Bridges—Thomson.

17. STRENGTH AND ELASTICITY OF MATERIALS:—*P. Gillespie.*

Departments 1, 3 and 4, IV Year; a laboratory course of about 11 hours per week.

This course of experiments is intended to give the student practice in investigating the elastic and physical properties of iron, steel, concrete, timber and other building materials.

Reference book:—Materials of Construction—Johnson.

18. THEORY OF STRUCTURES:—*C. R. Young.*

Department 1, III Year; 2 hours per week; both terms.

The work of the first term comprises a thorough discussion of restrained, continuous and trussed beams, multiple beam and box girders, plate girders and certain practical aspects of column design. A number of designs of girders and structural details are worked out in the class and drafting rooms.

The second term is given chiefly to the design of a riveted truss highway span and a riveted truss railway span, the complete designs being made in the lecture and drafting rooms.

19. THEORY OF STRUCTURES:—*C. R. Young.*

Departments 2, 3, 4, 6 and 8, III Year; 2 hours per week; first term.

The work is practically the same as that for Department 1 in the first term.

Text books:—Modern Framed Structures—Johnson, Bryan and Turneaure; Theory of Structures—Spofford; Bridge and Structural Design—Thomson; Aids in Structural Design—Young; Carnegie Pocket Companion; Cambria Steel.

20. FOUNDATIONS, RETAINING WALLS AND DAMS:—*P. Gillespie.*

Department 1, IV Year; 1 hour per week; both terms. *P.*

This course of lectures is devoted to the design of the structures mentioned. Preparatory to the discussion of the practical aspects of the subjects, and in order to gain familiarity with the fundamental principles involved, a part of the first term is given over to the consideration of the theory of compound stress. The most approved forms of construction of retaining walls, footings, abutments, piers and dams are then described, and typical designs are worked out in the class and drafting rooms.

Text books and books of reference:—Retaining Walls for Earth—M. A. Howe; Walls, Bins and Grain Elevators—M. S. Ketchum; A Treatise on Masonry Construction—I. O. Baker; Design and Construction of Dams—E. Wegmann.

21. CEMENTS AND CONCRETE:—*P. Gillespie.*

Departments 1, 4 and 8, III Year; 1 hour per week; second term

The manufacture, testing and use of Portland cement and the fundamentals of the theory of reinforced concrete are discussed in this course of lectures.

22. REINFORCED CONCRETE:—*P. Gillespie.*

Departments 1, 3 and 4, IV Year; 1 hour per week.

The theory of the strength of reinforced concrete elements including the beam, the slab, the T-beam and the column, is continued in this course.

The analysis of the monolithic arch by the elastic theory is discussed, and the student is required in the drafting room to apply his knowledge to the design of simple structures.

Reference books:—Principles of Reinforced Concrete Construction—Turneure and Maurer; Concrete, Plain and Reinforced—Taylor and Thompson.

23. IRON AND STEEL:—*T. R. Loudon.*

Taken by students in IV Year, who select the options (c) Structural Engineering, and (e) Strength and Elasticity of Materials.

Metallography—Mechanical Treatment, Heat Treatment; Metallurgy; Physical Properties; 1 lecture per week. Laboratory, second term.

24. MILL BUILDING DESIGN:—*C. R. Young.*

Departments 1 (*Structural Engineering Option*), 3 and 4 (*Architectural Engineering Option*), IV Year; 1 hour per week; both terms.

The structural problems involved in the design of mill buildings of timber, steel and reinforced concrete are discussed in this course of lectures. Consideration is given to the various types of buildings, the conditions governing their choice and the details of construction in different materials. Designs of portions of mill buildings are worked out in the class and drafting rooms.

Text books:—Mill Buildings—Tyrrell; Steel Mill Buildings—Ketchum.

24a. MISCELLANEOUS STRUCTURES:—*C. R. Young.*

Department 1 (*Structural Engineering Option* and *Sanitary and Highway Engineering Option*), IV Year; 1 hour per week, second term.

In this course of lectures the application of theoretical principles to the design of a variety of structures is made. Among those structures discussed are transmission line towers, elevated tanks and their supporting towers, standpipes, large pressure pipes, sewers, culverts, small highway bridges, sub-surface tanks and tall chimneys. Whenever possible the lecture work is followed up by designs in the drafting rooms.

MACHINERY.

25. THEORY OF MECHANISM:—*J. H. Parkin.*

Departments 3 and 7, II Year; Department 8, III Year; 2 hours per week; both terms.

This course of lectures treats of the motions of machines, the latter being assumed to be of sufficient strength to resist acting forces. The formation of machines is dealt with in a general way and investigations of the velocities of points and links are made. The design of gear teeth and the application of trains of gears are taken up, also problems in static equilibrium.

Problems are worked out in the drafting room in which the methods given are employed.

Text book:—Theory of Machines—Angus.

26. MECHANICS OF MACHINERY:—*J. H. Parkin.*

Departments 3 and 7, III Year; 1 hour per week; both terms.

In this course the questions dealt with are the construction of acceleration diagrams, the determination of the accelerations of various parts of machines, the kinetic energy of machines, the effect of the weights and accelerations of parts on the velocity of the fly-wheel and the proper weight of the latter to fulfil given conditions. The theory of various forms of governors is fully taken up and also the efficiency of machines.

Text book:—Theory of Machines—Angus.

27. MACHINE DESIGN:—*J. T. Lagergren.*

Departments 3, 6, 7, III Year; 1 hour per week; both terms.

The lectures in this course deal principally with the applications of the principles of kinematics and the theory of the strength of materials to the design of machine parts, such as shafting, gearing, journals, clutches, etc.

In addition to the lecture course time is spent in the drafting room where designs involving the above principles are worked out and the necessary calculations made. These designs are made as parts of some actual machine, such as an engine.

The laboratory work occupies $7\frac{1}{2}$ hours per week for Department 3, $4\frac{1}{2}$ hours for Department 6, and $3\frac{1}{4}$ hours for Department 7.

28. MACHINE DESIGN:—*J. T. Lagergren.*

Department 3, IV Year; 4 hours per week.

The lectures and practical work in this course are meant to supplement those of Course 27, and deal with more difficult problems and designs. The design of a complete machine is taken up, and detail drawings as well as an assembly drawing are made.

28a. MACHINE DETAILS:—*J. T. Lagergren.*

Departments 3, 6, 7, II Year; 1 hour per week, second term.

A course of lectures dealing with the design of details of machines.

HYDRAULICS.

29. HYDRAULICS—GENERAL COURSE:—*J. J. Traill.*

Departments 1, 3 and 7, III Year; 2 hours per week.

This is an introductory course of lectures in hydraulics, and is devoted to the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of discharge by various methods, such as orifices and weirs, the conditions of flow obtaining in open channels, artificial and natural, and in pipes flowing partially full, together with other kindred subjects.

The object of this course is to provide the student with a good working knowledge of the fundamental principle of hydraulics, such as is useful in practical work, and is necessary to the intelligent investigation of more advanced problems, such as the design of turbines, water-wheels and power plants generally.

29a. HYDRAULICS:—*J. J. Traill.*

Departments 2 and 8, III Year; Department 6, IV Year.

This course deals with the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of water by various methods, the conditions of flow in open channels and in pipes partly full. This work is followed by a brief discussion on pumps and other hydraulic machines.

30. HYDRAULIC LABORATORY:—*J. J. Traill.*

Department 1, III Year; 3 hours per week; one term. Departments 3 and 7, III Year; 4 periods of 3 hours each.

The work in this course is intended to illustrate the lecture course given in Hydraulics and to give the student some working acquaintance with the formulas met with in practice. Experiments are made to determine the coefficients for an orifice and the coefficients of discharge for a weir. The results of these experiments are used in measuring the discharge in subsequent experiments on meters and for the determination of hydraulic resistances in various cases of flow in pipes.

31. HYDRAULICS:—*J. J. Traill.*

Departments 1, 3 and 7, IV Year; 1 hour per week; both terms.

Following up the third year course in this subject the theory already acquired is applied to the solution of problems connected with branched pipes, water-mains discharging at various points along their length, the effect of a dam on the water level at any point on a stream and numerous other problems. The applications of hydrographic data and precipitation, evaporation and run-off relations are also considered.

31a. HYDRAULICS:—*R. W. Angus.*

Departments 1, 3 and 7, IV Year; 2 hours per week, both terms.

The most important question considered and to which most of the lectures are devoted is the theory of turbines and centrifugal pumps, the effect of the design on the speed, discharge power and efficiency being fully taken up.

Text books:—Hydraulic Motors—Bodmer; Centrifugal Pumps—Loewenstein and Crissey; Hydraulics—Merriman; Water Power Engineering—Mead.

32. HYDRAULICS:—*R. W. Angus, J. J. Traill.*

Departments 1, 3 and 7, IV Year; about 10 hours per week.

A laboratory course devoted to experimental work on turbines of various types and centrifugal and turbine pumps and other similar devices. This experimental work is arranged to illustrate the lectures on turbine and pump design. The experiments are made on two large turbine pumps used in the laboratory supply, as well as on apparatus specially designed for instruction. Various methods of measuring water-power and the efficiency of machines are also given.

32a. POWER:—*J. J. Traill.*

Departments 2, 6 and 8, IV Year; 24 hours.

A laboratory course of experiments on orifices, weirs, turbines, meters, pumps, etc.

32b. HYDRAULICS:—*J. J. Traill.*

Department 1, IV Year.

This is a lecture and laboratory course of six hours per week, first term, dealing with the flow of water in pipes and open channels, measurement of water, and pumps and pumping.

HEAT ENGINES.

33. THERMODYNAMICS:—*R. W. Angus.*

Departments 3, 6 and 7, III Year; 2 hours per week.

A lecture course in which the subject is treated in such a way as to make it of practical value and give a working acquaintance with the principles on which it is based. After the elementary ideas have been given and the proofs of the properties of Carnot's cycle, applications of the subject are made to the perfect gas and to saturated steam and to the various types of engines. Temperatures are taken from the air thermometer.

34. THERMODYNAMICS:—*R. W. Angus.*

Departments 1, 2 and 8, IV Year; 1 hour per week; both terms.

This course is especially designed to give the student a working knowledge of thermodynamics as applied to the perfect gas and steam so that he will be able to understand clearly the action of air compressors, steam engines, etc. After deducing general principles, the efficiency of compressed air transmission and the relative merits of different types of compressors are discussed. The steam engine and boiler are also discussed.

35. THERMODYNAMIC AND MECHANICAL LABORATORY:—*L. M. Arkley.*

Department 3, III Year; 2 hours per week, first term; 3 hours per week, second term. Departments 6 and 7, III Year; 2 hours per week, first term; 1½ hours per week, second term.

This laboratory course is designed to assist in a clearer understanding of thermodynamics, machine design and mechanics of machinery. The work in thermodynamics consists in the setting of slide valves, indicating engines measuring the brake horse-power, simple engine and boiler tests and the testing of gas and gasoline engines under various conditions. The mechanical laboratory work deals with the efficiency of belts and ropes as well as of several machines of simple construction. An examination of lubricating oils is also made by means of oil testing machines and other well-known devices. Experiments are also made on the balancing of reciprocating and rotating masses.

36. THERMODYNAMICS:—*R. W. Angus.*

Departments 3 and 7, IV Year; 2 hours per week; both terms.

This is a continuation of the introductory course, the subject being here treated from a general standpoint and the idea of entropy and of the absolute scale of temperatures being introduced. The course includes the treatment of saturated and superheated vapours, gases, the flow of fluids, chimney and boiler efficiency and the theory of various engines and other appliances including air compressors, refrigerating machines, and injectors.

Text books:—Thermodynamics—Peabody; Steam Tables—Peabody.

36a. THERMODYNAMICS:—*L. M. Arkley.*

Departments 3 and 7, IV Year; 1 hour per week, both terms.

Steam Power Plants. This course follows in logical order the courses on heat engines given in the second and third years. In it a study of the prime movers and auxiliary apparatus required in a power plant is made in such a manner as to indicate the proper choice of equipment under various conditions of operation.

37. THERMODYNAMICS:—*L. M. Arkley, J. H. Parkin.*

Departments 3 and 7, IV Year; about 10 hours per week.

The work in this year is a continuation and extension of the work covered in the third year laboratory course. Careful tests are made of engines of various types, such as simple, tandem and cross-compound steam engines; steam turbines; refrigerating machines; air engines; injectors and steam pumps, etc.; and an application is made of Hirn's analysis and the entropy diagram to the results obtained. A complete set of experiments is made on each machine and the result plotted so as to show clearly to the student the effect of various alterations in the adjustment of the engine on the resulting efficiency.

Several modern gas and gasoline engines and a gas producer give ample opportunity for the study of this type of engine, and facilities are provided for sampling the gas supply and exhaust.

Two experimental stacks and three boilers enable results to be obtained on boiler efficiency and chimney draft.

38. STEAM ENGINES:—*L. M. Arkley.*

Departments 3, 7 and 8, II Year; one hour per week; second term.

This course of lectures includes a discussion of the principles of action of the steam engine; also the theory and design of various simple forms of valve gears used in the operation of such engines.

39. HEAT ENGINES:—*L. M. Arkley.*

Departments 3 and 7, III Year; Department 8, IV Year; one hour per week, both terms.

This course in heat engines is intended for students in Mechanical, Electrical and Metallurgical Engineering, to be supplementary to the general course of lectures in thermodynamics.

The principal commercial forms of heat engines are dealt with in a more or less descriptive manner; special attention is given to considerations affecting the design of the ordinary forms of steam engines, gas engines and oil engines.

39a. POWER:—*L. M. Arkley.*

Departments 1, 2 and 8, IV Year; 21 hours.

A course of experiments with steam and gas engines, compressed air, etc.

ARCHITECTURE.

40. HISTORY OF ARCHITECTURE:—*H. H. Madill.*

Department 4, I Year; one hour per week; both terms.

In this course the development of architecture is treated very briefly and in an elementary manner, from the Pyramids of Egypt to the present, laying special emphasis on the Egyptian, Grecian and Western Asiatic work. The antique Greek and Roman orders are studied, and the students are required to make rendered drawings in the studio of certain orders and elements. An attempt is made to develop the student's sense of proportion, and in the latter part of the second term he is required to study a simple problem in design.

41. HISTORY OF ARCHITECTURE:—*H. H. Madill.*

Department 4, II Year; one hour per week; both terms.

The Classical, Early Christian, Byzantine and Romanesque styles of architecture are studied with the aid of the lantern. The student is required to become acquainted with the best examples in these styles in order that his sense of proportion and his taste may be developed and his knowledge of the different elements extended.

42. HISTORY OF ARCHITECTURE:—*A. Wellesley McConnell.*

Department 4, III Year; one hour per week; both terms.

In this course the work of the previous year is continued, with the study of Gothic and the Renaissance.

43. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*

Department 4, II Year; one hour per week; both terms.

In this course the development of Ornament is traced from the beginning through Egyptian, Assyrian, Grecian, Roman, Byzantine, Romanesque and Moresque styles. An attempt is made to analyze ornament of the best periods and to systematize the principles followed in form and color. The development and types of mouldings are also studied.

44. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*

Department 4, III Year; one hour per week; both terms.

A continuation of the course in Ornament given to the Second Year.

Instruction is given in lectures with the aid of the stereopticon. The students are required to become familiar with the characteristics and forms of the ornament used in the Gothic and Renaissance styles.

45. ORDERS OF ARCHITECTURE:—*A. Wellesley McConnell.*

Department 4, II Year; one hour per week; both terms.

Lectures on the Five Orders of Architecture, their affiliated forms and the other elements used in design. Simple problems in elementary design involving the use of the orders and other elements are set from time to time.

46. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, II Year; one hour per week; both terms.

This course is given by means of individual instruction in the classroom by criticisms of the solutions of different problems set during the year and by a series of lectures. It is in this course that the student begins the serious study of design; continued practice in architectural drawing and rendering affords the training necessary to make the student a proficient draughtsman.

47. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, III Year.

Theory and practice of Design.

This course is given by individual instruction in the studio and by lectures. The greater part of the course is devoted to problems in design, and forms a continuation of the course given in the preceding year.

48. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, IV Year.

The entire course is devoted to advanced academic training in designing the more monumental classes of buildings. The student is required to design and submit sketches and working drawings of some subject to be selected by himself.

48a. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, IV Year; Architectural Engineering Option.

A short course of lectures and studio work referring especially to the artistic side of the design of commercial buildings.

49. FREEHAND DRAWING AND WATER COLOR PAINTING:—*C. W. Jefferys.*

Department 4, I Year; 2 hours per week; both terms.

Drawing from still life objects. Primary freehand perspective. Primary pencil and pen and ink rendering.

49a. Department 4, II Year; 2 hours per week; both terms.

Drawing and monochrome painting from still life.

Drawing from the cast.

Pencil, pen and ink, and monochrome rendering.

Primary water color.

Drawing from landscape and natural objects

- 49b. Department 4, III Year; 2 hours per week; both terms.
 Drawing from the cast.
 Water color from still life. Water color rendering.
 Drawing from landscape and natural objects.
 Students who are sufficiently advanced are admitted to the Fourth Year Life Drawing Class.
- 49c. Department 4, IV Year; 2 hours per week; both terms.
 Water color from still life and from landscape.
 Drawing from life.
 Water color rendering.
50. MODELLING:—*J. L. Banks.*
 Department 4; I Year; 2 hours per week; both terms.
 The Orders. Synopsis of styles.
- 50a. Department 4; II Year; 2 hours per week; both terms.
 The styles elaborated.
 Problems in figures and in relation to architecture.
- 50b. Department 4; III Year; 2 hours per week; both terms.
 Styles continued.
 Problems, combination of figure, ornament and architecture, and their relative values.
- 50c. Department 4; IV Year; 2 hours per week; both terms.
 Modelling from life.
 Anatomy.
 Composition of groups.
51. STRUCTURAL DESIGN:—*C. R. Young.*
 Departments 1 (*Structural Engineering Option*) and 4, IV Year; 1 hour per week; both terms.
 This course of lectures is devoted to the problems connected with the structural design of buildings of timber, steel and reinforced concrete. The various structural elements, such as the floors, columns, footings, walls and wind bracing, are fully discussed, and portions of typical buildings are designed in the class and drafting rooms.
 Text books:—Architectural Engineering—Freitag; Steel Construction—Tucker; Structural Details—Jacoby; Architects' and Builders' Pocket Book—Kidder.

52. BUILDING MEASUREMENT:—*C. H. C. Wright.*

Department 4, I Year; 1 hour per week; both terms.

In this course of lectures the principles of measurements and mensuration with special reference to buildings will be discussed. With this is combined $4\frac{1}{2}$ hours per week practice in measurements of existing buildings, quantities, etc.

53. BUILDING MATERIALS:—*C. H. C. Wright.*

Department 4, III Year; 2 hours per week; both terms.

The structural and aesthetic value of the various building materials.

54. SANITARY SCIENCE:—*C. H. C. Wright.*

Department 4, IV Year; 1 hour per week; both terms.

Modern plumbing, its design and installation.

54a. HEATING AND VENTILATING:—*C. H. C. Wright.*

Department 4, IV Year; 1 hour per week; both terms.

The design of different systems, where they should be used, heating specifications, etc.

ASTRONOMY AND GEODESY.

55. ASTRONOMY, ELEMENTARY:—*C. A. Chant.*

Department 1, II Year; 1 hour per week; both terms.

A course in descriptive Astronomy, explaining the ordinary astronomical terms, and describing the various celestial bodies and their motions. In the evenings opportunity will be given for identifying the stars and for observing with telescopes.

Text book:—New Astronomy—D. P. Todd.

56. ASTRONOMY AND GEODESY:—*L. B. Stewart.*

Department 1, III Year; 2 hours per week.

The course of lectures deals with the determination of time, latitude, longitude and azimuth, by methods adapted to the use of the surveyor's transit and the sextant. It is designed to fulfil the requirements of the final examinations for Ontario and Dominion Land Surveyors.

In Geodesy an account is given of the principles and methods of a secondary triangulation survey, also of the principles involved in the North-West system of survey.

Text books:—Practical Astronomy as applied to Geodesy and Navigation—Doolittle; Nautical Almanac, 1917.

7. FIELD WORK:—*L. B. Stewart, S. R. Crerar.*

Department 1, III Year; about 1 hour per week; first term.

The practical work in this subject comprises observations in the field with the transit and sextant for the determination of time, latitude and azimuth by the methods described in the lectures.

58. ASTRONOMY (Advanced):—*L. B. Stewart.*

Department 1, IV Year; 2 hours per week.

The lecture course in this subject comprises the theory and adjustment of the instruments used in connection with a geodetic survey; the methods of taking and reducing observations for time, longitude, latitude, and azimuth, with the precision required on such a survey; and other matters relating to these subjects.

59. GEODESY AND METROLOGY:—*L. B. Stewart.*

Department 1, IV Year; 2 hours per week.

The lecture course includes a description of the methods of measuring base lines and the angles of a triangulation; the geometry of the spheroid with applications to geodetic problems; the computation of geodetic positions; the solution of large triangles on the earth's surface, and the adjustment of a triangulation; trigonometric and precise spirit levelling; the determination of the figure of the earth by arc measurements, and by the pendulum; the theory of map projections, etc.

60. ASTRONOMY, GEODESY AND METROLOGY:—*L. B. Stewart.*

Department 1, IV Year; about 23 hours per week.

The practical work in the above subjects includes the observation of meridian transits for time and longitude determinations, and of prime vertical transits for latitude, with the astronomical transit instrument; the observation of meridian zenith distances of stars, and of azimuths at elongation for latitude, with the alt-azimuth; theodolite observations for azimuth; observations for latitude with the zenith telescope; the investigation of the constants of the instruments used, and the reduction of all observations; the measurement of a base line with the steel tape and with invar wires, and the determination of the constants of the tape; the measurement of the angles of a triangulation and the adjustment of the angles of network of triangles, etc.

BIOLOGY.

61. ELEMENTARY BIOLOGY:—*B. A. Bensley.*

Department 5, I Year; optional in Department 1, III Year; 2 hours per week; both terms.

A course of two lectures a week throughout the session is designed as an introduction to the whole range of biological studies. After a sketch of the scope and objects of these, the lectures will treat (*a*) of the fundamental principles of biology, as illustrated by the simplest animals and plants; (*b*) of typical forms of higher plants in ascending order; (*c*) of typical forms of animals in a similar way; and (*d*) of the structure and functions of the human body

Students are recommended to make use of the Biological Museum in connection with this course of lectures. For reference: Jeffery Parker, *Elementary Biology*; Ramsay Wright, *High School Zoology*; Atkinson, *Elementary Botany*; Huxley, *Lessons in Elementary Physiology*.

62. **ELEMENTARY BIOLOGY:**—*A. G. Huntsman and J. H. Faull.*
 Department 5, I Year; 6 hours per week; second term.
 An elementary course of laboratory work on the general structure and identification of plants and animals, and the use of the microscope in the examination of tissues and products.
63. **ADVANCED BIOLOGY:**—*J. H. Faull.*
 Department 5, II Year.
 A course of instruction of 3 hours per week, second term, on the Morphology and Physiology of Bacteria, Moulds and Yeast Fungi.
- 63a. **ELEMENTARY BIOLOGY:**—*E. M. Walker.*
 Department 1, IV Year.
 An Elementary Course of Laboratory work and demonstrations in General Biology, six hours per week, first term.
64. **BACTERIOLOGY:**—*J. G. Fitzgerald.*
 Departments 1, 5 and 6, IV Year; a lecture and laboratory course of 8 hours per week, second term, on elementary bacteriology.

BUSINESS.

65. **ACCOUNTING:**—*W. S. Ferguson.*
 All Departments, I Year; 1 hour per week; both terms.
 The principles of accounting; illustrated by typical accounts.
66. **BANKING AND FINANCE:**—*M. A. Mackenzie.*
 All Departments, II Year; 1 hour per week; both terms.
 Money and the instruments of credit; stocks and bonds.
67. **LIMITED COMPANIES:**—*J. W. Pickup.*
 All Departments, III Year; 1 hour per week; both terms.
 Partnerships; the history and development of the limited liability company; the Companies Acts; Company finance.
68. **CONTRACTS AND SPECIFICATIONS:**—*C. R. Young.*
 Departments 1 and 4, IV Year; 1 hour per week; second term.
 This course of lectures deals with the fundamental principles of contract and specification writing. The critical examination of typical specifications and agreements by the class forms an essential feature of the instruction.

Text books:—Engineering Contracts and Specifications—Johnson: Elements of Specification Writing—Kirby; Specifications and Contracts—Wadell-Wait; Principles of Specification and Agreement Writing—Young.

69. COST-KEEPING, ETC.:—*J. W. Bain, H. W. Price, L. M. Arkley.*
Departments 3, 5, 6 and 7, IV Year.
Works management, mechanical specifications, analysis of costs, reports.
70. COST-KEEPING:—*H. E. T. Haultain, G. A. Guess.*
Departments 2 and 8, IV Year.
Mining and Metallurgical costs and cost keeping methods, ore contracts, smelter settlements, practical problems.

CHEMISTRY.

75. ELEMENTARY CHEMISTRY:—*E. G. R. Ardagh.*
All Departments, I Year; 2 hours per week; both terms.
A lecture course in elementary chemistry dealing with the metals and non-metals, with experimental illustrations.
76. ELEMENTARY CHEMISTRY:—*M. C. Boswell.*
Departments 2 and 6, I Year; 3 hours per week; second term.
A laboratory course to illustrate the use of the sensitive balance, to verify some of the laws which form the basis of the science, and to serve as an introduction to quantitative laboratory methods.
Instruction given as required before each period.
77. INORGANIC CHEMISTRY:—*W. H. Ellis.*
Departments 5, 6 and 8, I Year; 1 hour per week; second term.
A lecture course on the elements and important inorganic compounds, supplementing Course 75.
Text book:—Introduction to General Inorganic Chemistry—Alex. Smith.
78. INORGANIC CHEMISTRY:—*L. J. Rogers.*
Departments 5 and 8, I Year; about 17 hours per week; both terms.
A laboratory course of quantitative experiments illustrating the use of the sensitive balance, and confirming the fundamental laws of chemistry; qualitative inorganic analysis; quantitative analysis of pure salts; inorganic preparations; molar weight determinations.
Text book:—Manual of Chemical Analysis, Qualitative and Quantitative—Newth.
79. INORGANIC CHEMISTRY:—*J. W. Bain.*
Departments 2, 5, 6 and 8, II Year; 1 hour per week; first term.
A lecture course on the chemistry of the metals; a continuation of Course 75.

80. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh*.
 Departments 5 and 8, II Year; Departments 2 and 6, III Year; 1 hour per week: both terms.
 A lecture course on the principles of chemical analysis; select gravimetric and volumetric methods; technical analysis.

81. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh*.
 Departments 1, 2, 3 and 7, II Year; 6 hours per week; one term.
 Laboratory practice in elementary qualitative and quantitative analysis.
 Text book:—A Smaller Chemical Analysis—Newth.

82. ANALYTICAL CHEMISTRY:—*J. W. Bain*.
 Department 2, II Year; 3 hours per week; both terms.
 A laboratory course in the gravimetric determination of metals and acids, with elementary volumetric analysis.
 Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

83. ANALYTICAL CHEMISTRY:—*L. J. Rogers*.
 Departments 5 and 8, II Year; 14 hours per week; 17 weeks.
 A laboratory course comprising gravimetric and volumetric methods, acidimetry and alkalimetry.
 Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

84. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh*.
 Department 6, II Year; 6 hours per week; both terms.
 A laboratory course in qualitative and elementary quantitative chemical analysis; inorganic preparations.
 Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

85. ENGINEERING CHEMISTRY:—*J. W. Bain*.
 Departments 1, 2, 3, 5, 6, 7 and 8, II Year; 1 hour per week; second term.
 A lecture course consisting of a study of the industrial production and application of heat and light, and of the chemistry of fuel and the products of combustion.

86. INDUSTRIAL CHEMISTRY:—*W. H. Ellis*.
 Departments 5 and 6, II Year; 1 hour per week; both terms.
 A lecture course on the manufacture of salts, acids, alkalies and inorganic chemicals.
 Text book:—Inorganic Chemistry—Thorp.

87. ORGANIC CHEMISTRY:—*M. C. Boswell.*
 Departments 1, 2, 3 and 7, II Year; 1 hour per week; first term.
 A lecture course in elementary organic chemistry.
 Text book:—Theoretical Organic Chemistry—Cohen.

88. ORGANIC CHEMISTRY:—*M. C. Boswell.*
 Departments 5 and 6, II Year; 2 hours per week; both terms.
 A lecture course dealing with the aliphatic compounds.
 Text book:—Theoretical Organic Chemistry—Cohen.

89. ORGANIC CHEMISTRY:—*M. C. Boswell.*
 Department 5, II Year; 14 hours per week; 7 weeks.
 A laboratory course in organic preparations in the aliphatic series

90. PHYSICAL CHEMISTRY:—*W. L. Miller.*
 Departments 5, 6 and 8, II Year; 2 hours per week; both terms.
 A course of lectures on the elements of chemical mechanics, and the theory of solutions.

91. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
 Department 5, III Year; 19 hours per week; 16 weeks.
 A laboratory course on the technical analysis of iron and steel alloys, ores, furnace products, ceramic materials, foods, gases, fuels, etc.

92. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
 Department 6, III Year; 11 hours per week, first term; 13 hours per week, second term.
 A laboratory course in volumetric and technical analysis.

93. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
 Departments 2 and 8, III Year; 5 hours per week; both terms.
 A laboratory course on the technical analysis of ores and furnace products.

94. ENGINEERING CHEMISTRY:—*W. H. Ellis and J. W. Bain.*
 Departments 1, 2, 3, 5, 6 and 7, III Year; 1 hour per week; both terms.
 A lecture course on the application of chemistry to engineering problems; air, water, sewage, the materials of construction, explosives, etc.

95. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*
 Departments 5 and 6, III Year; 1 hour per week; both terms.
 A lecture course on petroleum and its products, coal tar and its products, the destructive distillation of wood; fats, oils, soap, sugar, starch, and gums; fermentation industries, etc.
 Text book:—Industrial Chemistry—Thorp.

96. CHEMICAL PLANT:—*J. W. Bain.*
Departments 5 and 6, III Year; 1 hour per week; both terms.
A lecture course on the machinery and plant used in chemical manufacturing.

97. ORGANIC CHEMISTRY (A):—*M. C. Boswell.*
Departments 5 and 6, III Year; 2 hours per week; both terms.
A lecture course on the aromatic series.
Text book:—Theoretical Organic Chemistry—Cohen.

98. ORGANIC CHEMISTRY (B):—*F. B. Allan.*
Departments 5 and 6, III Year; 1 hour per week; second term.
A lecture course on stereoisomerism, desmotropism, etc.

99. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 5, III Year; 19 hours per week; 8 weeks.
A laboratory course in organic preparations in the aromatic series; organic analysis.

100. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 6, III Year; 17 hours per week; 4 weeks.
A laboratory course in organic preparations.

101. ELECTROCHEMISTRY:—*W. L. Miller.*
Departments 5, 6, 7 and 8, III Year; Department 2, IV Year; 2 hours per week; first term.
A lecture course on elementary electrochemistry, illustrated by experiments.

102. ELECTROCHEMISTRY:—*W. L. Miller and J. T. Burt-Gerrans.*
Departments 5, 6, 7 and 8, III Year; 3 hours per week; first term.
A laboratory course in quantitative measurements to accompany Course 101.

103. INORGANIC CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, IV Year; 1 hour per week; first term; 2 hours per week; second term.
A lecture course on chemical theory.

104. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on advanced organic chemistry.

105. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, IV Year.
A laboratory course in advanced organic chemistry

106. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on selected subjects in chemical technology.
107. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, IV Year; about 28 hours per week; both terms.
A laboratory course in industrial problems.
108. ELECTROCHEMISTRY:—*J. T. Burt-Gerrans.*
Departments 5, 6 and 7, IV Year; 2 hours per week; both terms.
An advanced lecture course on the theory of solutions and electrolysis, and the application to the practice of electro-deposition and electrolytic refining of metals. The course also includes lectures on the electric furnace with special consideration of efficiency.
Text books:—Electrometallurgy—Borchers; Electrochemistry—Le Blanc; Electrochemistry—Luepke.
109. ELECTROCHEMISTRY:—*W. L. Miller and J. T. Burt-Gerrans.*
Departments 5, 6 and 7, IV Year; about 28 hours per week.
A laboratory course accompanying Course 108.
110. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on the composition and examination of air, water and food; poisons and their detection.
111. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, IV Year.
A laboratory course accompanying Course 110.
112. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Department 2, IV Year, 12 hours per week; first term.
A laboratory course comprising analysis of ores and furnace products.
113. SANITARY CHEMISTRY:—*H. M. Lancaster, E. G. R. Ardagh.*
Department 1, IV Year.
A lecture and laboratory course of about 16 hours per week for one term on water supply, sewage disposal, ventilation, etc.

DESCRIPTIVE GEOMETRY AND DRAWING.

115. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Departments 1, 2, 3, 6, 7 and 8, I Year; 1 hour per week; both terms.
This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solutions of problems relating to straight lines and planes.

116. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 4, I Year; 1 hour per week; both terms.

This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solution of problems relating to straight lines and planes, special reference being made to the determination of shades and shadows.

117. DRAWING:—*J. R. Cockburn.*

Departments 1 and 2, I Year; about 16 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; the plotting of original surveys; measured drawings.

118. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell.*

Department 4, I Year; about 15 hours per week.

Copying from the flat, lettering, topography, freehand drawing in black and white, both from copies and models; the graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings. Elements and principles of Architecture.

119. DRAWING:—*J. R. Cockburn.*

Department 5, I Year; about 9 hours per week.

Copying from the flat, lettering, measured drawings.

120. DRAWING:—*J. R. Cockburn.*

Departments 3, 6, 7 and 8, I Year; about 20 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings.

121. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Departments 1, 2, 3, 7 and 8, II Year; 1 hour per week; both terms.

This course of lectures is a continuation of the work taken in the first year with the following additions: Problems relating to curved surfaces, principles of shades, shadows and perspective.

122. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 4, II Year; 1 hour per week; both terms.

This course of lectures is a continuation of the work taken in the First Year with the addition of problems relating to curved surfaces, shades, shadows and perspective.

123. DRAWING:—*J. R. Cockburn.*

Departments 1 and 2, II Year. Department 1, about 14 hours per week. Department 2, about 7 hours per week; both terms.

Coloring and shading as applied to both topographical and construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

124. DRAWING:—*J. R. Cockburn.*

Departments 3 and 7, II Year; about 15 hours per week; both terms.

Coloring and shading as applied to construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics, theory of mechanism and strength of materials; measured drawings; elementary design.

125. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell.*

Department 4, II Year; about 18 hours per week; both terms.

Freehand drawing including monochrome and colors; exercises from the orders of architecture; principles of shades, shadows and perspective; elementary architectural design; problems in descriptive geometry relating to solids bound by curved surfaces; solution of problems in optics and strength of materials; measured drawings.

126. DRAWING:—*J. R. Cockburn.*

Department 6, II Year.

Same as Department 3, with exception that theory of mechanism is not included.

127. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 1, III Year; 1 hour per week; first term.

This course of lectures deals with spherical projections, the principles of mapmaking, and the graphical solution of spherical triangles.

128. DRAWING:—*J. R. Cockburn, C. R. Young.*

Department 1, III Year; about 12 hours per week.

Principles of mapmaking, spherical projection, plotting of original surveys relating to topographical and railway work; problems in theory of construction; original design of various structures; measured drawings.

129. DRAWING:—*J. R. Cockburn.*

Department 2, III Year; $4\frac{1}{2}$ hours per week.

Plotting of original surveys, relating to topographical and railway work and mining; problems in theory of construction; original design; measured drawings.

130. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell, C. R. Young.*
 Department 4, III Year; about 16 hours per week, first term; 22 hours per week, second term.
 Advanced work in monochrome and colors; problems in shades, shadows and perspective; architectural design; problems in theory of construction, including framed structures.
131. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
 Department 4, III Year; 1 hour per week; first term.
 Advanced work in shades, shadows and perspective.
132. DRAWING:—*J. R. Cockburn, C. R. Young.*
 Departments 2, 3 and 6, III Year; 3 hours per week; both terms.
 Problems in design dealing with the theory of structures.

ELECTRICITY.

135. MAGNETISM AND ELECTRICITY:—*H. W. Price.*
 Departments 3, 5, 6 and 7, I Year; Department 8, II Year; 2 hours per week; first term.
 A course of lectures on general principles relating to magnetism, electricity, electromagnetism, electrostatics, etc., illustrated largely from engineering apparatus.
136. ELECTRIC CIRCUITS:—*W. S. Guest.*
 Departments 3, 5, 6 and 7, I Year; 2 hours per week; second term.
 This course of lectures concerns chiefly fundamental principles relating to electric circuits, and leads to consideration of such problems as the distribution of electric energy through lines and networks and the division of load between generators.
137. ELECTRICITY:—*W. S. Guest.*
 Departments 3, 5, 6 and 7, I Year; 3 hours, alternate weeks; both terms.
 A laboratory course of experiments, given in logical order, designed to demonstrate fundamental principles in connection with the generation and flow of currents in electric circuits. The work is associated with the lecture courses, magnetism and electricity, and electric circuits (135, 136).
138. ELECTRICITY:—*T. R. Rosebrugh.*
 Departments 3, 5, 6 and 7, II Year; 2 hours per week; both terms.

Deals with the theory of electrical measurements, and detailed study of various methods applicable under different conditions in engineering practice to the measurement of resistance, current, potential difference, power and energy; calibration of commercial measuring instruments. The effect of choice of conditions of measurement on the accuracy of the result is considered.

139. ELECTRICAL LABORATORY:—*W. S. Guest.*

Departments 3, 5, 6 and 7, II Year; $2\frac{1}{2}$ hours per week; both terms. This laboratory course is closely associated with the lecture course 138 on electricity for the second year. The more important and useful methods of testing generators and circuits for electromotive force, resistance, current, grounds, etc., are practised, often under conditions such as occur in practice. The work also includes methods of calibration of measuring instruments for voltage, current, power and energy, and certain studies of properties of incandescent lamps.

140. ELECTRICITY:—*H. W. Price.*

Department 8, II Year; 1 hour per week; second term; Departments 5 and 6, III Year; 1 hour per week; second term; Department 2, III Year; Departments 1 and 4, IV Year; 1 hour per week. A course designed to fit the requirements of non-electrical students. A study of essential principles is followed by discussion of electrical apparatus plants, power transmission, railways, etc.

141. POWER:—*H. W. Price.*

Departments 2, 6 and 8, IV Year; 24 hours. Under the name "Power" a number of operating experiments are arranged to afford some familiarity with measuring instruments and direct and alternating current machinery.

142. MAGNETISM AND ELECTRICITY:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 2 hours per week; both terms. A course of lectures on theory of magnetism and magnetic circuits, theory of direct current generators, motors, etc.

143. ALTERNATING CURRENT:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 1 hour per week. A first course of lectures on alternating current, covering principles of measurement and leading to the analytical and graphical treatment of the simpler problems relative to alternating current circuits and machinery.

144. ELECTRICAL LABORATORY:—*T. R. Rosebrugh, H. W. Price.*

Department 3, III Year; 4½ hours per week; Department 7, III Year; 6 hours per week.

This laboratory course is intended to afford the student an opportunity to become familiar with principles involved in continuous current shunt, series and compound wound generators and motors, and, to some extent, alternating current circuits and machinery. Other sections of the work deal with the magnetic properties of iron and steel, and study of iron losses in transformers and generators.

The course is arranged to stand in close relation to the lecture courses in the subjects of magnetism and electricity and alternating current (142, 143) for III Year, and to certain design work (145).

145. ELECTRICAL DESIGN:—*H. W. Price.*

Department 7, III Year; 1 hour per week.

A course of lectures dealing with design of electric machinery and plants, accompanied by designs to be worked out in the design room.

146. ELECTRICAL DESIGN:—*H. W. Price.*

Department 7, III Year.

A design room is set apart for working out designs of electrical apparatus such as transformers, generators, motors, auxiliary apparatus, etc.

Special forms and notes are employed, arranged to suit the various studies. Certain models are provided to assist where necessary.

147. APPLIED ELECTRICITY;—*T. R. Rosebrugh.*

Department 7, IV Year.

This course deals by analytical and vector methods with the theory of alternating current circuits and machinery. Applications of theory are considered with regard to transformers, single and polyphase generators, synchronous motors and rotary converters, induction and commutating series motors, transmission lines, wave analysis, etc.

148. ELECTRICAL LABORATORY;—*T. R. Rosebrugh, H. W. Price.*

Department 7, IV Year, in connection with 147.

This laboratory course involves a thorough study of principles and properties of single and polyphase circuits and apparatus. Both vector and analytical methods are applied to the solution of problems based on tests made on laboratory machines.

The work deals mainly with constant voltage and constant current transformers, single and polyphase alternators, synchronous motors, rotary converters, induction and single phase commutating motors, transmission line, etc. The work does not consist only of factory tests, but is designed to lead the student to apply theory to practice as illustrated in the apparatus under test, with a view to an exact understanding of methods and an appreciation of limitations under many conditions. Free use is made of the oscillograph as a necessary device for "seeing" conditions under investigation. The best commercial measuring instruments are available.

GEOLOGY.

150. GEOLOGY (Elementary):—*A. P. Coleman.*

Departments 2 and 5, II Year; Department 1, III Year; 1 hour per week; both terms.

This course deals chiefly with historical geology with special reference to Canadian formations.

Reference books:—Introduction to Geology—Scott; Text Book of Geology—Dana.

151. ECONOMIC GEOLOGY. (Including Dynamical and Structural Geology):—*A. P. Coleman.*

Departments 2 and 5, III Year; 1 hour per week; first term; 2 hours per week; second term. Department 1, IV Year; 1 hour per week; both terms.

A study of the more important economic rocks, minerals and ores with their geological associations. Special attention paid to Canadian deposits.

152. ADVANCED GEOLOGY:—*A. P. Coleman.*

Department 2, IV Year; 2 hours per week; both terms.

(A) *Pre-Cambrian Geology*.—An account of the Keewatin, Huronian and Laurentian rocks of Canada, with their distribution, structural relations and economic features, and briefer accounts of similar formations in the United States and elsewhere.

Works of Reference:—Reports of the United States and Canadian Geological Surveys, of the Bureau of Mines of Ontario, etc.

(B) *Pleistocene Geology*.—Lectures on the formation and distribution of the drift deposits of North America, with brief references to other regions. Glacial, Interglacial and Postglacial beds are described, changes of climate are discussed with their probable

causes, and the economic features of the clays, sands and gravels are pointed out. A weekly excursion is made during October and November to points of interest near Toronto, which is the centre of the most important development of Pleistocene in America.

- (C) *Physiography*.—A course of lectures on the surface forms of the earth, with the geological factors which have produced them. The broad features of the earth, its plains, tablelands, hills, valleys, mountains, oceans, rivers and lakes are discussed in a general way, methods of topographical surveys and mapping are referred to, and the chief physiographic areas of Canada are described.

153. MINING GEOLOGY:—*A. P. Coleman*.

Department 2, IV Year; 1 hour per week; both terms.

A course of lectures on geological problems associated with mining, typical mining regions in Canada, the United States and elsewhere being discussed from the geological side.

Works of reference:—Mineral Industry and the books mentioned under (A).

154. GEOLOGICAL EXCURSIONS:—*A. P. Coleman*.

Department 2, IV Year.

Trips to points of interest in the vicinity of Toronto.

155. ORE DEPOSITS:—*A. P. Coleman*.

Department 2, III Year; 1 hour per week; both terms.

Discussion of the origin and classification of ore deposits in a general way, the mode of occurrence of the chief metals, and statistics of production, special attention being given to the metals mined in Canada.

156. ECONOMIC GEOLOGY:—*W. A. Parks*.

Department 2, III Year; 2 hours per week; second term.

Laboratory work on ores, manner of occurrence, vein structure, etc.
Geological maps of typical mining regions.

MINERALOGY.

157. ELEMENTARY MINERALOGY:—*J. E. Thomson*.

Departments 5 and 8, I Year; Department 2, II Year; 2 lectures per week; first term.

After introducing the student to the chief chemical, physical and crystallographic characteristics of minerals, the course becomes descriptive and deals with about one hundred of the minerals most important from the industrial or scientific point of view.

Text books:—Minerals and how to study them—Dana; Text Book of Mineralogy—Dana.

158. MINERALOGY:—*J. E. Thomson.*

Department 5, I Year; 4 hours per week, first term; 3 hours per week, second term. Department 8, I year; 1 hour per week; first term.

Introduction to blow-pipe analysis, determination of minerals by inspection and physical tests.

Text books:—Text Book of Mineralogy—Dana; Determinative Mineralogy—Lewis.

159. PRIMARY MINERALOGY:—*A. L. Parsons.*

Department 1, II Year; 2 hours per week; first term.

A very brief introduction to the study of minerals and rocks.

Text books:—Minerals and how to study them—Dana; Handbook of Rocks—Kemp.

160. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 2, II Year; 1 hour per week, first term; 3 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; introduction to blow-pipe practice.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy—Lewis.

161. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 1, II Year; 1 hour per week, first term; 2 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; study of common rock types and their identification.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

162. MINERALOGY:—*A. L. Parsons.*

Department 5, II Year; 1 hour per week; second term.

Introduction to the study of rocks; determination of minerals and rocks by means of tables based on the physical properties.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

163. ELEMENTARY PETROGRAPHY:—*T. L. Walker.*

Department 2, III Year; 1 hour per week.

A course of lectures and laboratory work introducing the student to the macroscopic study of rocks.

Text books:—Handbook of Rocks—Kemp; Rocks and rock minerals—Pirsson.

164. MINERALOGY:—*J. E. Thomson.*

Department 2, III Year; 2 hours per week.

Determination of minerals by means of the blow-pipe and physical properties.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy—Lewis.

165. GENERAL PETROGRAPHY:—*T. L. Walker.*

Department 2, IV Year. 1 hour per week.

Study of the chief rock-forming minerals and of some phases of petrography not covered in the course of the previous year.

166. PETROGRAPHY:—*T. L. Walker.*

Department 2, IV Year; 2 hours per week; both terms.

Study of the chief rock-forming minerals, of rocks in thin sections and in hand specimens.

Text books:—Rocks and Rock Minerals—Pirsson; Minerals in Rock Sections—Luquer.

167. CRYSTALLOGRAPHY:—*A. L. Parsons.*

Department 5, III Year; 1 hour per week.

A course devoted to lectures and practical work on the geometrical and optical properties of crystals, preparing the student for the study of rocks in thin sections and for the examination of crystallized substances, natural and artificial, under the polarizing microscope.

168. MINERALOGY:—*J. E. Thomson.*

Department 8, I Year; 1½ hours a week, second term.

Determination of minerals by means of the blow-pipe.

Text Book:—Lewis, Determinative Mineralogy.

169. MINERALOGY:—*A. L. Parsons.*

Department 8, II Year; 1 hour per week.

Determination of minerals by physical properties.

Text Book:—Mineral Tables—Eakle.

MINING, ASSAYING AND ORE DRESSING.

170. MINING:—*H. E. T. Haultain.*

Department 2, II Year; 1 hour per week; first term. Department 8, II Year; 1 hour per week; both terms.

An introduction to the study of mining and ore dressing methods.

171. MINING AND ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*

Departments 2 and 8, II Year; 3 hours per week; first term.

Introductory work with rock-drills and various ore dressing appliances.

172. MINING:—*H. E. T. Haultain, F. C. Dyer.*

Departments 2 and 8, III Year; 2 hours lectures per week, second term; 3 hours' laboratory work per week, second term.

General mining methods.

173. ASSAYING:—*H. E. T. Haultain, J. T. King.*

Departments 2 and 8, III Year; 1 hour lecture per week, first term;
3 hours' laboratory work per week, both terms; Departments 5
and 6, III Year; 1½ hours' laboratory work per week; both
terms.

Assaying of various ores for gold, silver, lead and copper.

174. ASSAYING:—*H. E. T. Haultain, J. T. King.*

Department 2, IV Year; 1 hour lecture per week, one term; 3 hours'
laboratory work per week, one term.

Continuation of the work of III Year.

175. MINING:—*H. E. T. Haultain.*

Department 2, IV Year; 1 hour lecture per week: both terms.

Special mining methods, examinations, reports.

176. MILLING:—*H. E. T. Haultain, F. C. Dyer.*

Department 2, IV Year; 3 hours' laboratory work per week; both
terms.

Advanced work with ore dressing appliances, complete mill tests.

177. ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*

Departments 2 and 8, III Year; 1 hour per week; both terms.

179. ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*

Department 2, IV Year; 1 hour per week; both terms.

METALLURGY.

180. METALLURGY:—*G. A. Guess.*

Departments 2, 5 and 6, IV Year; 1 hour per week; both terms.

Advanced studies in the metallurgy of gold, silver, copper, lead, nickel,
and zinc, metallurgical problems.

181. FERRO-METALLURGY:—*T. R. Loudon.*

Departments 1, 2, 3, 5, 6, 7 and 8, III Year; 1 hour per week; both terms.

The physical properties of iron and steel and the circumstances that
influence the strength, etc., of iron. The different modes of manu-
facture of iron and steel and the effect of different processes of
making on the resulting products; explanations of specifications
for iron and steel adopted by engineers.

182. METALLURGY:—*G. A. Guess.*

Department 2, IV Year; 6 hours' laboratory work per week; second
term.

Calibration of pyrometers, blast furnace smelting and copper con-
verting, cyanidation, acid leaching of copper ores, electrolytic
refining of lead and copper, electrometallurgy.

183. METALLURGY:—*G. A. Guess.*

Departments 2, 5, 6 and 8, II Year; 1 hour per week; second term.
An introduction to the study of general metallurgy.

184. METALLURGY:—*G. A. Guess.*

Departments 2, 5 and 6, III Year; 1 hour per week; both terms.
General metallurgy.

185. METALLURGY:—

Department 8, II Year; 1 hour per week, both terms.

A lecture course in the study of metallurgical fuels, their use, preparation, calorific value and temperature of combustion, introduction to the study of metallurgical processes. Problems.

Two hours' laboratory work, second term.

186. METALLURGY:—*G. A. Guess.*

Department 8, III Year; 1 hour per week; first term; 4 hours per week; second term.

The uses, properties and metallurgy of the metals except iron, with special reference to copper, nickel, lead and zinc. The study of clays and their industrial uses. An additional laboratory course of 100 hours.

186a. METALLURGY:—*G. A. Guess.*

Department 8, IV Year; 2 hours per week, both terms, and 9 hours' laboratory work, both terms.

Lixiviation of copper ores, design and organization of plants, metallurgical book-keeping, metallurgical balance sheets, thermal balance sheets, electrometallurgy, electrolytic refining processes, a particular study of Canadian problems.

MATHEMATICS.

187. ALGEBRA:—*A. T. DeLury.*

Departments 1, 2, 3, 5, 6, 7, 8, I Year; 2 hours per week; both terms.
Simple equations of one, two and three unknown quantities; quadratic equations of one and two unknown quantities; graphic representation of functions and the introduction of the gradient function; proportion and progressions; interest forms and annuities, permutations, combinations, limits, the general theory of infinite series, binomial theorem, exponential and logarithmic series.

Text book:—Intermediate Algebra—DeLury.

188. ANALYTICAL GEOMETRY:—*I. R. Pounder.*

All Departments, I Year; 1 hour per week first term; 2 hours per week second term.

The course in Elementary Analytical Geometry covers the more familiar propositions in connection with the straight line, circle, parabola, ellipse and hyperbola. The subject is treated so as to illustrate the general methods of analytical geometry.

189. TRIGONOMETRY, PLANE:—*M. A. Mackenzie.*

Departments 1, 2, 3, 5, 6, 7, 8, I Year; 2 hours per week; first term.

Solutions of triangles and practical problems.

Text book:—Practical Trigonometry—Plane and Fawdry.

190. CALCULUS, DIFFERENTIAL AND INTEGRAL:—*S. Beatty.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; Department 5, II Year, optional; 2 hours per week; both terms.

This is an elementary course in the infinitesimal calculus, but adequate to afford a knowledge of the character and methods of the subject and to enable students in chemistry, engineering, etc., to understand such of their text books as introduce the calculus.

191. TRIGONOMETRY, SPHERICAL:—*L. B. Stewart.*

Department 1, II Year; 1 hour per week; first term.

A course of lectures includes the derivation of formulæ and their application to the solution of triangles and to practical problems.

Text book:—Spherical Trigonometry—Todhunter and Leatham.

192. LEAST SQUARES, METHOD OF:—*L. B. Stewart.*

Department 1, III Year; 1 hour per week; first term.

The course of lectures includes: The general principles of probability, the law of error, direct measurements of equal and different weights; mean square and probable errors; indirect measurements; conditioned observations; applications to empirical constants and formulæ, etc.

Text book:—Least Squares—Merriman.

TECHNICAL PHYSICS.

195. ACOUSTICS:—*G. R. Anderson.*

Department 4, III Year.

Wave motion, propagation, reflection and transmission of sounds. Laws of vibrating strings, pipes and forks. Velocity of sound. Musical scales. Absorption of sound by various substances, use of deadening material in buildings. Amount of reverberation permissible and desirable in public buildings. Lectures and laboratory work.

196. HYDROSTATICS:—*G. R. Anderson.*

All Departments, II Year.

Laws of fluid pressure and application to machines. Density of solids and fluids, theory of flotation.

Lectures and laboratory work. Spring term.

197. OPTICS:—*G. R. Anderson.*

Departments 1, 2, 3, 5, 6 and 7, II Year.

Rectilinear propagation of light, illumination, photometry, light standards. Distribution of light by reflectors and diffusers, general and selective absorption, economic values of artificial lights.

Laws of reflection and refraction, theory of optical instruments.

Light considered as wave motion, dispersion, spectrum analysis, colour phenomena, polarization.

Lectures and laboratory work, Fall term.

197(a). OPTICS AND LIGHTING:—*G. R. Anderson.*

Dept. 4, II Year.

198. HEAT:—*G. R. Anderson.*

Departments 1, 5 and 8, III Year.

Generation and propagation of heat. General and industrial thermometry, calorimetry and pyrometry. Linear and cubical expansion, gas laws. Specific heat of solids, liquids and gases, latent heat of fusion and vaporization. Mechanical equivalent of heat. Carnot cycle.

Lectures and laboratory work, Fall term.

199. PHOTOGRAPHY:—*G. R. Anderson.*

Departments 1 and 4, III Year; Departments 3 and 7, IV Year.

The camera and its adjustments, lenses, shutters, screens. Plates for various purposes, films, prevention of halation. Lighting, exposure, development. Paper of various kinds, printing, enlargement and reduction, blue printing and allied processes. Record photography, photogrammetry and photo-surveying. Photography in colour.

Lectures Fall term, and laboratory work both terms.

200. ILLUMINATION:—*G. R. Anderson.*

Department 4, II Year.

Principles of interior and street illumination. Artificial lighting of public and private buildings, etc.

SURVEYING.

205. SURVEYING:—*S. R. Crerar.*

Departments 1 and 2, I Year; 1 hour per week; both terms.

The lecture course includes the general principles; surveying with the chain, the compass and chain and the transit and chain; the applications of trigonometry to inaccessible heights and distances; mensuration of surfaces and solids, co-ordinate surveying, division of land, etc.

Text books:—Land Surveying—Gillespie; Theory and Practice of Surveying—Johnson.

206. FIELD WORK:—*S. R. Crerar.*

Departments 1 and 2, I Year; 9 hours per week; first term.

This course comprises testing chains; practice in chaining; a complete survey of a piece of land with the chain; keeping of field notes; the use of the compass and transit in surveying closed figures and traverse lines and in ranging straight lines; plotting by latitudes and departures, and otherwise computing areas.

207. SURVEYING:—*W. M. Treadgold.*

Departments 1 and 2, II Year; 1 hour per week; both terms.

This course of lectures takes up in detail, simple, reverse and compound curves as applied to railroad surveying. It also includes stadia, plane table and photographic surveying as applied to topographic work, and the main features of mine and hydrographic surveying.

Text books:—Henck, Shunk, Searles, Allen (Field books for Engineers) Theory and Practice of Surveying—Johnson; Plane Surveying—Raymond.

208. FIELD WORK:—*W. M. Treadgold, E. W. Banting.*

Departments 1 and 2, II Year; 9 hours per week; first term.

This course of instruction embraces all adjustments of the transit, accurate determination of angles of closed figure, minor problems in triangulation—ordinary and special problems as applied to railroad work in regard to curves, simple, reverse and compound, profile levelling and plotting of profile.

209. SURVEYING AND LEVELLING:—*W. M. Treadgold.*

Department 1, III Year; 1 hour per week; both terms; Department 2, III Year; 1 hour per week; first term.

This course of lectures takes up the work of the railroad engineer on construction, including profiles, cross sectioning, computation of volume of earthwork, overhaul, transition curves, laying out turnouts, frogs and switches, etc.

Also a discussion of trigonometric and barometric levelling.

Text books:—Field Engineering—Searles; Railroad Curves and Earthworks—Allen.

210. FIELD WORK:—*W. M. Treadgold, E. W. Banting.*

Departments 1 and 2, III Year; about 9 hours per week; first term.

This includes adjustments of levels and accurate check differential levelling, determination of profile, cross sectioning and computation of earthwork of located line on ground and plotting of same; also cross sectioning by use of hand level. A complete stadia topographic survey is made and plotted.

ADDITIONAL, FOURTH YEAR OPTIONS.

211. RAILWAY ENGINEERING:—*W. M. Treadgold.*

Department 1, IV Year; about 2 hours per week.

The object of this course is to make the student acquainted with the general principles of railroad and street railway engineering, and the subject will be studied from the standpoint of economic theory of location; train resistance; effect of grade, distance and curvature and rise and fall; maintenance of way; yards and terminals; tunnels, and street railway practice.

212. FIELD WORK:—*W. M. Treadgold.*

Department 1, IV Year; about 11 hours per week; first term.

The work consists of an original survey for a railroad some one or two miles in length, the work being conducted according to the most modern methods of location. Upon the completion of this work a contour map of the district surveyed is plotted in the drafting room and a line adjusted to it. This is staked out in the field, profiles taken and complete estimates of the cost of construction made.

213. SANITARY ENGINEERING.

Sanitary Chemistry (113).

Advanced Biology (63a).

Bacteriology (64).

Re-inforced Concrete (22).

Hydraulics (32b).

Miscellaneous Structures (24a).

Sanitary Engineering:—A lecture course of 1 hour per week, both terms, in which consideration is given to the problems of water supply and sewage disposal as viewed by the engineer. Some practice in the design of works from assumed data is afforded.

Reference books:—*Sewage Disposal*—Fuller; *Public Water Supplies*—Turneaure & Russell.

214. HIGHWAY ENGINEERING:—

Department 1, IV Year.

A lecture and laboratory course of about 8 hours per week, dealing with materials, design and construction of highways and pavements and the testing of various materials used in such work.

215. STRUCTURAL ENGINEERING:—

Students in Civil Engineering who desire to specialize in the subjects best fitting them for designing or constructing engineers on bridge-building or other analogous work, may do so by selecting the Structural Engineering Option in the fourth year. In addition to the obligatory subjects, the following lecture and laboratory courses are provided for those selecting this option:

Theory of Structures (16).
Strength and Elasticity of Materials (17)
Iron and Steel (23).
Reinforced Concrete (22).
Structural Design (51).
Mill Building Design (24).
Miscellaneous Structures (24a).

216. ARCHITECTURAL ENGINEERING:—

Architectural students desiring to give special attention to the structural design of buildings may do so by electing to take the Architectural Engineering Option in the fourth year. The following subjects, in addition to those required of all students in the fourth year in Architecture, are required:

Mill Building Design (24).
Architectural Design (48a).

MODERN LANGUAGES.

217. FRENCH:—*J. Squair, J. S. Will, J. B. Wallace.*

Required in Department 4, optional in Departments 1, 2, 3 and 7, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

218. GERMAN:—*G. H. Needler.*

Required in Departments 5 and 6, all years, optional in Departments 1, 2, 3 and 7, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

THESIS.

219. THESIS.

Required in all Departments, IV Year.

Each student is required to prepare a thesis of between six thousand and seven thousand words on a subject approved by Council.
 See circular of information.

VACATION WORK.

220. CONSTRUCTION NOTES. See special circular of information.

OUTLINE OF VACATION WORK**CONSTRUCTION NOTES.**

II and III Years.

The construction notes required consist of neat and complete dimensioned sketches in pencil of any structures, machines or plants which may be of interest. Any object chosen should be represented and dimensioned in such a manner that it could be completely constructed from the notes as the only available information.

From students in Department 2, who have been actually engaged during the summer with Government or other approved geological survey parties, geological field notes will be accepted in lieu of construction notes.

MASTER OF APPLIED SCIENCE DEGREE.

1. A candidate for the degree of Master of Applied Science (M.A.Sc.) shall hold the degree of Bachelor of Applied Science (B.A.Sc.) of this University.
2. He shall spend not less than one academic year in attendance as a student, in the Faculty of Applied Science, on a course of study approved by the Council.
3. He shall present a satisfactory thesis on a subject approved by the Council.
4. He shall pass such examinations as the Council may decide.
5. The candidate must register at the beginning of the academic year.

PROFESSIONAL DEGREES.

The attention of graduates is directed to the following regulations respecting professional degrees.

The following degrees have been established: Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem.E.), subject to the following regulations:

1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science or of the Faculty of Applied Science and Engineering or the degree of Bachelor of Applied Science.
2. He shall have spent at least three years after receiving the diploma or the degree in the actual practice of the branch of engineering wherein he is a candidate for a degree.
3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.

4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidate's professional experience for the purpose of clauses 2 and 3.

The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree, the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.

The candidate may be required at the option of the Examiners to undergo an examination in the subject of this thesis.

6. Notice in writing shall be sent to the Secretary not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Examiners.

7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Secretary not later than the first day of April.

8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Examiners.

9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.

10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the University.

ROYAL ONTARIO MUSEUM.

Archæology, Geology, Mineralogy, Palæontology, Zoology.

Students of the University in all departments are recommended to avail themselves of the privileges of the Museum, which, although under separate control, is intimately connected with the work of the University.

The Museum is open on all week days from 10 a.m. to 5 p.m. The admission is free to the public on Tuesday, Thursday and Saturday. On other days an admission fee of fifteen cents is charged.

By a resolution of the Board of Trustees all regular students of the University may be admitted free on all days of the week by presenting their card of registration.

LABORATORY EQUIPMENT.

THERMODYNAMIC AND MECHANICAL LABORATORY.

The University in 1909 completed the erection of a large, well-equipped building for the accommodation of the steam, gas, mechanical and hydraulic laboratories. A more complete description of the laboratories has been published elsewhere, so that the present description is only intended to give the main features.

The part of the building set apart for thermodynamics and other mechanical work is the ground floor of a room 60 ft. x 155 ft. This room is lighted entirely from the roof in a very perfect way. A part of the space 40 ft. wide running the entire length of 155 feet is served by a 3-ton travelling crane and contains the following equipment:

50 h.p. Brown engine with separate jackets on both heads and barrel of cylinder.

Two-stage Rand air compressor having compound steam cylinders, each fitted with Meyer cut-off gear. The low pressure air cylinder has Corliss inlet gear.

30 h.p. high-speed Leonard tandem compound engine with shaft governor.

15 h.p. high-speed McEwen engine.

75 h.p. two-line compound Willans engine.

15 h.p. DeLaval turbine with special nozzles for condensing and non-condensing tests.

Two 15 h.p. Leonard engines with different types of valves, which are used for valve setting.

There are also two surface condensers with air pumps so arranged that any engine in the laboratory may be made to exhaust into the atmosphere through an open heater or into one of the condensers, the change from one arrangement to the other being accomplished in a few minutes without the aid of valves.

The laboratory further contains:

A 3 ton York refrigerating machine with tanks.

An Amsler transmission dynamometer.

Apparatus for testing injectors and steam pumps.

Numerous other pieces of apparatus and instruments.

The work on internal combustion engines and producers is performed on the following:

18 h.p. Canada suction gas producer.

14 h.p. National gas engine arranged for various compressions and points of ignition.

10 h.p. Fielding and Platt engine for city gas or coal oil, having various adjustments.

8 h.p. Otto gas engine.

6 h.p. marine gasoline engine.

Ericsson air engine.

Various accessories to above machines.

Steam for the laboratory is supplied by two 50 h.p. and one 100 h.p. Babcock and Wilcox boilers, the latter having an internal superheater. These boilers are located in a separate boiler room. They are used for experimental work only and are fitted up for testing. The gases pass up through two independent chimneys, and these have been arranged so that the draft and other conditions in the chimney at any point of its height may be examined.

In smaller work-rooms off the main laboratory are placed belt and oil testing machines, apparatus for testing the efficiency of gears and machines, and for experiments in the balancing of machinery.

HYDRAULIC LABORATORY.

The hydraulic laboratory occupies two floors each 40 feet x 112 feet, which are well lighted by large windows on the side and end

The water for the experimental work is pumped through the various pieces of apparatus from a well by means of two turbine pumping units, both of which are driven by a Belliss and Morcom compound engine of 125 h.p. running at a speed of 525 revs. per minute. Both engine and pumps have been installed with a view to using them in experimental work as well as for supply of water for other apparatus used in the laboratory.

The pumping units are capable of delivering one cubic foot of water per second against heads of 250 feet and 300 feet respectively. These units are designed and connected up so that they may be run in series giving the above discharge at 550 feet head, or they may be run in parallel giving double the discharge at a lower head. Each pumping unit consists of two two-stage pumps mounted on a common base and driven by a single pulley, and the construction and piping are such that each two-stage pump may be driven separately or that all may be driven at once, discharging separately one cubic foot per second at about 125 feet head through each of four independent pipes, or else the pumps may be run in series or in parallel. The scheme is thus well adapted to laboratory work, and under the heads used on reaction turbines about six cubic feet per second may be obtained

The laboratory further contains a large vertical steel tank $5\frac{1}{2}$ feet diameter by 34 feet high with arrangements for the attachment of nozzles and other mouthpieces, etc. Connections are also arranged for reaction turbines, the tank acting as a reservoir.

The discharge from the turbines or nozzles is measured in a weir tank nearly 6 feet wide and 21 feet long, containing a contracted weir $4\frac{1}{2}$ feet wide. This weir may be calibrated by two weighing tanks, each having a capacity of about 240 cubic feet.

There are three reaction turbines and two impulse wheels all ready for experiment, the power being measured by brakes and the water by weir or orifices. Amongst the reaction turbines may be mentioned the one designed and built by Escher Wyss & Co., specially for the laboratory.

Smaller orifice and weir tanks, each about $3 \times 3 \times 12$ feet with necessary measuring tanks, are arranged for instruction in coefficients of various kinds and practice with weirs and orifices.

A Venturi meter and other meters, also an hydraulic ram and similar devices are available for testing, and good facilities have been arranged for investigating friction and other properties of pipes and fire hose.

For special investigations on turbine and centrifugal pumps, other pumps in addition to those already described have been arranged.

The basement of the laboratory contains an open trough 5 feet wide, about 110 feet long, with a large weir at one end. It is intended to use this trough for experiments on the flow in open channels, for measurements of large discharges by means of the weir, and for experiments with current meters and Pitot tubes.

Numerous pieces of smaller apparatus, together with all instruments required, have also been provided, and the laboratory equipment is believed to be very complete.

DONATIONS TO THE THERMODYNAMIC AND HYDRAULIC LABORATORIES.

The following donations to the equipment of the laboratories have been made through the kindness of those mentioned:

50 h.p. Wheeler Surface Condenser, presented by Mr. F. M. Wheeler, New York.

Blake Feed Pump, presented by the manufacturers.

6-inch New American Turbine, presented by Wm. Kennedy & Sons, Owen Sound, Ont.

Two Crown Water Meters, presented by the National Meter Co., New York, through Mr. M. Warnock, Toronto.

Rock Drill, presented by Sullivan Machinery Co., New York, through Mr. A. E. Blackwood, '95.

Marine Gasoline Engine, presented by Canadian Fairbanks Co., Montreal.

Two engines with different types of valve, presented by Messrs. E. Leonard & Sons, London, Ont.

Bundy trap from American Radiator Co., through Messrs. Russell & Gifford.

Dunham steam trap from C. A. Dunham Co.

Sectional models of valves from American Radiator Co.

Sectional model Mason Reducing Valve by Russell & Gifford.

Tanks, etc., by John Inglis Co. Pressure Fan from Sheldons Ltd., Galt.

In addition to the above, other firms have materially assisted by offering apparatus at or below cost price, among whom may be specially mentioned, The Canadian Rand Drill Co., Sherbrooke, Quebec.

PHYSICAL LABORATORIES.

The optical laboratory is equipped with Weinhold optical benches and accessories for determining the constants of mirrors and lenses and for demonstrating the construction and use of telescopes, field glasses, microscopes, etc. There is also a full equipment of optical instruments, including telescopes, microscopes, field glasses, comparators, spectrometers, level tester, photometers of various types, focometer, dynamometer, cathetometer, polariscope, projecting lanterns, etc.

The photographic laboratory is supplied with cameras for viewing, copying, enlargement and reduction, a spectroscopic camera and an electric blue printing machine and the necessary dark-rooms.

The hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balances, Jolly balance, Mohr's balance, hydrostatic press, vacuum pumps, gauges, etc.

The heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat, expansion apparatus, air thermometer, apparatus for verification of Boyle's law and pressure and boiling point curve, and for determination of the absolute expansion of mercury, Callendar's apparatus for determination of the mechanical equivalent of heat.

The acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajous' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electropneumatic wind chest and standardized organ pipes and other accessories.

ELECTRICAL LABORATORIES.

Galvanometer laboratory.—The equipment of this laboratory is, in part, as follows: A set of D'Arsonval galvanometers conveniently located at tables about the laboratory, a set of resistance boxes for use with the same; measuring instruments, including ammeters, voltmeters, wattmeters, potentiometers and standard cells. Apparatus for the measurement of low resistance, including a ductor, and for high resistance, including a megger; several Carey Foster outfits and a Roller bond tester. There are also experimental lines for practice in locating faults, photometer outfits with rotating devices and various types of arc lamps.

Another room is fitted more especially for calibration of electrical instruments for alternating and direct currents. About one hundred and twenty portable measuring instruments are available for students' use, also standard instruments, including Weston laboratory standards, Kelvin balances and a Wolff potentiometer, with which the portable instruments may be compared.

Machine laboratory.—This laboratory, occupying two large rooms, contains twenty-five dynamos and motors varying in capacity from two to twenty kilowatts, adapted for experiments illustrating the properties of compound, shunt and series dynamos and motors, arc machines, as well as the use of interpoles. Switch-boards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines.

This laboratory also contains two 15 kw., 25 cycle and two special 15 kw., 60 cycle General Electric polyphase revolving field alternators direct driven by motors, two $7\frac{1}{2}$ kw. alternators, two rotary converters of 10 kw. and 5 kw. capacity, a $7\frac{1}{2}$ kw. General Electric polyphase induction motor with slip ring rotor, Westinghouse three-phase squirrel cage induction motors, Wagner single phase motor and unity power factor motor, Swedish General Electric variable speed motor, Westinghouse single phase series motor, Westinghouse alternator, and several three phase and single phase induction motors; also transformers, reactive coils, and other details, as in the direct current sections of the laboratory described above, for experiments on the properties of alternating currents and alternating current apparatus in general. A constant-current transformer with its load of six series arc lamps, a three-element oscillograph, for studying wave forms, a high potential transformer and a mercury arc rectifier may also be mentioned. The students are supplied with Weston, Westinghouse and Thomson portable instruments for measuring purposes.

A motor generator set has been installed, comprising a 65 h.p. motor driving on the same shaft a 30 kw. 110 volt d.c. generator and a 30 kw. 60 cycle 110 volt alternator with direct connected exciter.

Appliances are also provided for the study of saturation and hysteretic properties of samples of iron and steel, and models for exercise in winding armatures.

High tension room. In a separate room with proper automatic devices for safety to the operator, there is installed a 20 K.W. transformer with a range of voltages up to 200,000 volts. Studies of insulators may be carried out. It is expected that the facilities for measurement of high voltage will shortly be improved by the installation of a sphere gap. Work with high frequency also is in contemplation.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accommodation for 112 students, each working space being supplied with water, gas and fume cupboard. The laboratory for quantitative analysis will accommodate 48 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 36 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. A laboratory for fourth year students with accommodation for eight workers has been fitted up. Each of these laboratories has its own balance room adjoining furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. A calorimeter room has been equipped in the basement. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

ELECTROCHEMICAL LABORATORIES.

The Electrochemical laboratories, which are situated in the Chemistry and Mining building, are provided with special facilities for electrolytic work, including a large storage battery and electroplating dynamo with tanks as well as a complete set of apparatus and electrical measuring instruments. The experimental work on electric furnaces is performed in two rooms specially equipped for this purpose with rheostats and switch-board connections to a 120 kw. d.c. generator which supplies the current required.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building. One has a floor space of 17 feet x 47 feet, and the other 28 feet x 37 feet. Adjoining each is a room 15 feet x 11 feet, with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances

set on a concrete pier. Each of the laboratories contains a number of melting holes for crucible fusions, various gas furnaces both for crucibles and muffles, and two large brick muffle furnaces.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 feet x 13 feet) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

METALLURGICAL LABORATORY.

This laboratory is on the basement floor of the Chemistry and Mining Building. The main room has a floor space of 1600 square feet.

Among the larger furnaces included in the equipment of the laboratory are a gas fired muffle roasting furnace, a Steele-Harvey tilting furnace, a large resistance furnace for high temperature work, two water jacketed blast furnaces and a copper converter.

There is Cottrell precipitating unit using rectified current at 50,000 volts in two 12 inch pipes and capable of handling 500 cubic feet of gas per minute.

The laboratory has several small furnaces of various types and facilities are provided for pyrometric work, for zinc retorting, for furnace gas analysis, for leaching of ores and for the electrolytic refining and precipitation of metals.

There is also a laboratory for the testing of clays equipped with grinding pan, ball mill, presses, gas fired and oil fired kilns.

MILLING AND CONCENTRATING LABORATORY.

A detached building, 72 feet x 70 feet in area, contains the milling and concentrating equipment. It is heated, lighted and supplied with power from the main building, and is divided into two parts. The greater part, with 72 feet x 53 feet floor space, and 22 feet high, contains the milling and concentrating equipment. The machinery for the former operations consists of a five-stamp battery erected on concrete foundations, Challenge ore feeder, amalgamating plates, Wilfley table, a clean-up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. This is driven by a 15-horsepower motor.

The concentrating part consists of a set of five revolving trommels for wet screenings, four three-compartment jigs, a trough classifier delivering three products, and two revolving buddles, Wilfley Slimer, Deister Slimer, Richard's Pulsating Classifier, Richard's Pulsating Jig, a dry sizer, besides experimental apparatus of various kinds for experimenting on the falling rates of ore particles, the settling of slimes, surface tension action in grease and flotation methods, etc. The waste products run to the same settling tanks as the tailing stream from the stamp battery. The ore is handled by a travelling crawl. All the machinery in this part is driven by a 10-horsepower motor.

The lower floor has been fitted up for lixiviation work with apparatus for the treatment of sands and slimes, different types of filter press, vacuum plant agitators, etc.

The plant throughout is intended mainly for experimental purposes and is made of such a size that numerous experiments can be carried out on small quantities of ore. Tests can also be made on lots of one or two tons.

The other part of the milling building with 72 feet x 17 feet floor space and 15 feet high is divided into four separate rooms. The largest of the four rooms has an area of 476 square feet and is devoted to the crushing and pulverizing of the ores preparatory to their treatment in the milling and concentrating room. It is isolated in order to confine the dusty operations as far as possible to this one room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches, platform scales for weighing ore, a jib crane, pulleys, buckets, etc., for handling the rock. An adjoining room contains a 30 h.p. motor for driving the machinery of the crushing department, and storage bins for ore, work bench, etc. Another room with 17 feet x 15 feet floor space is furnished with a magnetic separator of the Rowan-Wetherill type, driven by its own motor.

STRENGTH OF MATERIALS LABORATORY.

This laboratory is intended for the scientific and commercial testing of materials of construction such as iron, steel, timber, concrete and masonry.

It is supplied with the following:

An Emery 50-ton hydraulic machine, built by Wm. Sellers & Co., of Philadelphia, for making tests in tension and compression.

A 100-ton screw power machine, built by Riehle Bros., Philadelphia. It is designed for making tests in tension, compression, shearing and cross-breaking, and will take in posts 12 feet long and beams up to 18 feet in length.

A Riehle 10-ton screw power universal testing machine.

A Riehle 50-ton screw power universal testing machine.

A 15-ton single lever-machine, built by J. Buckton & Co., Leeds, England.

A torsion machine, built by Tinius Olsen & Co., Philadelphia, for testing the strength and elasticity of shafting. This machine will twist shafts up to 16 feet in length and 2 inches in diameter.

A hand power torsion machine of simple mechanical construction, specially designed for the testing of short shafts of a maximum diameter of one inch.

A Riehle transverse testing machine of 5,000 pounds capacity, adapted to specimens up to 48 inches in length.

A Riehle compressometer, with spherical seat attachment for the adjustment of specimens having slightly non-parallel faces. This compressometer will receive specimens up to 10 inches in length.

An Olsen compression micrometer of standard type.

A 20,000 pound Olsen, hand power, wire testing machine, specially fitted for testing wooden columns with both fixed and pivoted ends.

A Riehle abrasion cylinder, built to the standard required by the National Brickmakers' Association, adopted in 1901.

A Page Impact Machine for testing the toughness of road metals.

A diamond core-drill for preparing specimens for the Page impact machine.

A two-cylinder Deval abrasion machine for testing the wear-resisting properties of road materials.

A Berry strain-gauge for spans of 3 inches and 8 inches.

A Nalder dividing engine. This may be used either for the precise division of scales or for the calibration of instruments intended for refined measurements.

A large number of extensometers of the usual degree of precision. These include the Bauschinger, Martens, Unwin, Ames, Riehle, Johnson, Henning (recording) and other types. In addition there are the usual scales, micrometers, telescopes and reflectors, voltmeters for the determination of metallic contact, and such other appliances as are necessary in the making of precise measurements.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labour. It is also supplied with the necessary appliances for making ordinary repairs and for making apparatus for special experiment and original investigation.

CEMENT TESTING LABORATORY.

This laboratory is fitted with all the ordinary moulds, sieves, balances, burettes, steaming and drying tanks, tables, and other appliances necessary in making the usual physical tests of a Portland cement. It is also supplied with completely equipped cabinets for individual work. In addition there are the following:

A 2,000 lb. Riehle machine fitted for either tension or compression.

A 2,000 lb. Riehle shot machine for tension.

A 2,000 lb. Fairbanks shot machine for tension.

A 1,000 lb. Olsen automatic shot machine fitted for tests in either tension or cross breaking.

An Olsen soapstone moist closet of modern design.

METROLOGICAL LABORATORY.

The department of surveying and geodesy is provided with all the ordinary field instruments, such as transits, levels, compasses, micrometers, sextants, planimeters, plane tables, tapes, chains, etc., with which is carried on the instruction in practical field operations as detailed elsewhere.

A small laboratory is also established in the basement of the observatory described below, containing the necessary instruments for the refined measurements of geodetic surveying; as, a standard yard and metre, a Rogers 10-foot comparator, an invar base measuring apparatus, a Kater's pendulum with vacuum chamber, a level trier, micrometer microscopes, etc.

The geodetic observatory in connection with this department is used for the instruction of students of the Fourth Year in taking observations for time, latitude, longitude, and azimuth by the precise methods used in connection with a geodetic survey. It contains a 10-inch theodolite and zenith telescope by Troughton & Simms; an astronomical transit instrument and an 8-inch theodolite by Cooke; two electro-chronographs; a Howard astronomical clock; a Dent sidereal break-circuit chronometer; arithmometers, etc.

GEOLOGICAL AND MINERALOGICAL LABORATORIES.

In the Chemistry and Mining building on College Street the University possesses a modern laboratory for Geology and Mineralogy.

Courses are given in laboratory work, especially in personal examination of type sets of rocks, fossils, minerals and crystal models. These laboratory exercises serve to illustrate the introductory didactic instruction.

For the encouragement of pure crystallography the laboratories are supplied with goniometers of the various types, crystal models, appliances for the cutting of oriental crystal sections and for the physical examination of the same. Practical petrography is carried on in rooms provided with type sets of rocks, both macroscopic and microscopic. Advanced students are taught to make thin sections of rocks and fossils and to study them microscopically. For students in Mining a laboratory course in the interpretation of geological maps and sections is provided. Typical mining regions are studied in detail and an opportunity is afforded for the examination of specimens illustrating economic geology.

The laboratory for the preparation of thin sections of rocks, minerals and fossils is provided with electric diamond saws and grinding appliances for the various types of work incidental to the preparation of thin sections and museum material.

A room is also provided for advanced work in cartography and geological surveying.

The departments possess 28 petrological microscopes and 5 of other types, so that it is now possible to provide advanced students with instruments and sets of thin sections for their own especial use. The blowpipe laboratory contains 156 lockers, especially designed for apparatus for students.

LIBRARY.

Rooms have been set apart in the Engineering and the Chemistry and Mining buildings for the housing of such periodicals and other literature of the University Library as is of special interest to the students of this faculty.

The University Library is contained in a building of its own, situated on the east side of the campus, that lies to the south of the Main Building. All students who have paid a library fee to the Bursar of the University are entitled to the privileges of the Library. Besides Reading Rooms the Building contains Departmental Studies, which may be used as study-rooms by honour students in the various branches and in which the Professors hold seminary courses. The Library is opened at 8.45 every morning and remains open until 5.15 in the afternoon (6 p.m. during the second term). Books may not be taken out of the building during the daytime, but are lent for the night shortly before the hour of closing, to be returned the following morning before 10 o'clock. Books not in general demand may, on special application, be borrowed for a longer period. Failure to return a borrowed book at the proper time and other breaches of the regulations are punishable by fine or suspension from the privileges of the Library.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE UNIVERSITY OF TORONTO.

Officers for 1915-1916.

<i>President</i>	W. L. Dobbin.
<i>Vice-President</i>	W. B. Honeywell.
<i>Corr.-Secretary</i>	R. S. C. Bothwell.
<i>Rec. Secretary</i>	K. J. McEachern.
<i>Treasurer</i>	R. L. Shoebottom.
<i>Chairman, Civil Club</i>	L. F. Barnes.
<i>Chairman, Elec. and Mech.</i>	J. R. Chapman.
<i>Chairman, Chem. Club</i>	B. Brown.
<i>Chairman, Arch. Club</i>	J. L. Skinner
<i>Chairman, Mining Club</i>	B. A. McCrodan.
<i>Fourth Year Representative</i>	J. R. Kirby.
<i>Third Year Representative</i>	H. R. Nicholson.
<i>Second Year Representative</i>	J. H. McVean.
<i>First Year Representative</i>	L. J. Seibert.
<i>Curator</i>	A. B. Wood.

The Society meets every second Wednesday during the academic year (except April), beginning with the third Wednesday in October. Papers are read, and discussions are held on engineering subjects. The Society publishes a journal monthly during the year, containing the best papers read at the meetings. A supply department is conducted by the Society, on a co-operative plan, through which instruments, drafting supplies, stationery, etc., may be purchased at a low cost. The Society is divided into five clubs for the purpose of affording a medium of study of matters relating in particular to the different departments of engineering.

THE INDUSTRIAL CHEMICAL CLUB.**Officers for 1915-1916.**

<i>Hon. President.</i>	Dean Ellis.
<i>Hon. Vice-President.</i>	Prof. J. W. Bain.
<i>Chairman.</i>	N. B. Brown.
<i>Vice-Chairman.</i>	G. G. Macdonald.
<i>Fourth Year Representative.</i>	C. E. Oliver.
<i>Third Year Representative.</i>	J. V. Dickson.
<i>Secretary-Treasurer.</i>	J. E. Fasken.
<i>Curator.</i>	A. M. Phillips.

The object of the Chemical Club is to promote the study of industrial chemistry and chemical engineering. Illustrated lectures, preceded by an informal dinner and a short musical programme, are held fortnightly, and on the following day an excursion is made to industrial chemical concerns located in the city or vicinity.

ARCHITECTURAL CLUB, 1915-1916.

<i>Hon. President.</i>	J. M. Lyle.
<i>Chairman.</i>	J. L. Skinner.
<i>Secretary.</i>	G. R. Gouinlock.
<i>Treasurer.</i>	A. S. Mathers.
<i>Graduates' Representative.</i>	W. C. Skinner.

The Club is addressed at regular meetings by leading architects. Excursions are conducted to inspect various phases of construction work, involving work of interest to architects.

**MECHANICAL AND ELECTRICAL ENGINEERING CLUB,
1915-1916.**

<i>Chairman.</i>	J. R. Chapman.
<i>Vice-Chairman and Fourth Year Rep.</i>	A. E. Widdicombe.
<i>Secretary and Third Year Rep.</i>	S. G. McCandlish.
<i>Treasurer and Second Year Rep.</i>	E. W. McLeod.
<i>Curator and First Year Rep.</i>	W. D. Stalker.

The Club meets every Thursday during the academic year for the discussion of papers relating to mechanical and electrical engineering problems.

CIVIL ENGINEERING CLUB, 1915-1916.

<i>Chairman</i>	L. F. Barnes.
<i>Fourth Year Representative</i>	L. A. Lee.
<i>Third Year Representative</i>	R. W. Hurlburt.
<i>Second Year Representative</i>	G. M. Pearce.
<i>First Year Representative</i>	W. H. Irwin.

The Club is addressed during the academic year by practising engineers on modern methods and problems in civil engineering.

**MINING AND METALLURGICAL ENGINEERING CLUB
1915-1916.**

<i>Chairman</i>	Byron A. McCrodan.
<i>Vice-Chairman</i>	Geo. Hanmer.
<i>Secretary-Treasurer and Third Year Rep.</i>	{ H. D. Wallace. E. R. Gilley.
<i>Second Year Representative</i>	{ C. Richardson. J. W. Crane.
<i>First Year Representative</i>	E. C. Fairbrother.

**ATHLETIC ASSOCIATION (FACULTY)
EXECUTIVE COMMITTEE 1915-1916.**

<i>Honorary President</i>	C. H. C. Wright.
<i>President</i>	J. Richmond.
<i>Vice-President</i>	J. R. Gilley.
<i>Secretary-Treasurer</i>	R. A. Barbour.
<i>Fourth Year Representative</i>	W. B. Scott.
<i>Third Year Representative</i>	O. W. Titus.
<i>Second Year Representative</i>	W. J. Parker.
<i>First Year Representative</i>	K. L. Carruthers.

The Athletic Association has full control over all athletic clubs using the name of the Faculty of Applied Science. The Executive Committee has power to suspend any one from the privileges of membership in the Association for any breach of its regulations, and controls the finances of all athletic clubs in the aforesaid Faculty. The annual membership fee of this Association is fifty cents.

No other moneys are collected for the support of athletics in the Faculty of Applied Science without the sanction of the Executive Committee.

RUGBY FOOTBALL.

The Mulock Cup, which was presented by Sir Wm. Mulock, M.A., LL.D. to the University of Toronto Rugby Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

RUGBY FOOTBALL CLUB.

Officers for 1915-1916.

<i>Honorary President</i>	T. R. Loudon.
<i>President</i>	H. C. Rose.
<i>Manager senior team</i>	S. Taylor.
<i>Captain senior team</i>	D. Gardner.
<i>Manager junior team</i>	E. Birdsall.
<i>Captain junior team</i>	D. G. Scott.

ASSOCIATION FOOTBALL.

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB.

Officers for 1915-1916.

<i>Honorary President</i>	C. H. C. Wright.
<i>President</i>	S. Taylor.
<i>Manager</i>	G. C. Hagedorn.
<i>Captain</i>	J. R. Gilley.

HOCKEY.

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of the late W. T. Jennings, Mem. Inst. C.E.

HOCKEY CLUB.

Officers for 1915-1916.

<i>Honorary President</i>	C. R. Young.
<i>President</i>	J. R. Gilley.
<i>Manager senior team</i>	J. Richmond.
<i>Manager junior team</i>	D. G. Scott.

TRACK CLUB.

Officers for 1915-1916.

<i>Honorary President</i>	Prof. L. B. Stewart.
<i>President</i>	R. Workman.
<i>Manager</i>	C. Richardson.

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

<i>Officer Commanding</i>	Major S. P. Biggs.
<i>Captain</i>	{ T. C. Irving, Jr. E.F. G. N. Bramfitt.
<i>Lieutenant</i>	V. Boyd.
<i>Lieutenant</i>	T. R. Loudon.
<i>Lieutenant</i>	W. Monds.
<i>Lieutenant</i>	J. Heron.
<i>Medical Officer</i>	J. W. Barton, M.D.

BASKETBALL CLUB.

Season 1915-1916.

<i>Honorary President</i>	Prof. J. McGowan.
<i>President</i>	L. F. Barnes.
<i>Manager of Seniors</i>	E. R. Gilley.

FACULTY OF APPLIED SCIENCE.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Y.M.C.A. of the Faculty of Applied Science was organized January 27th, 1905, and forms an integral part of the University of Toronto Y. M. C. A., which is a Federation of the Associations of the various Colleges and Faculties of the University. The object of the Association is to develop a true Christian manhood and to help the students in whatever way possible.

FACULTY OF APPLIED SCIENCE.

VARSIITY REPRESENTATIVES.

<i>Senior</i>	L. W. Harron.
<i>Junior</i>	H. D. Wallace.

UNIVERSITY OF TORONTO C.O.T.C.

Staff.

<i>Lieut.-Colonel</i>	W. R. Lang.
<i>Major</i>	A. D. LePan.
<i>Major</i>	C. V. Massey.
<i>Adjutant</i>	G. N. Bramfitt.
<i>Quartermaster</i>	Lieut. C. H. C. Wright.
<i>Paymaster</i>	Lieut. T. A. Reed.
<i>Medical Officer</i>	Capt. J. W. Barton.
<i>Musketry Officer</i>	Capt. F. B. Kenrick.

Establishment: 12 Companies and 1 half Company.

APPLIED SCIENCE COMPANIES.

<i>I Company</i>	Capt. C. R. Young.
<i>K Company</i>	{ Capt. H. H. Madill. Lieut. W. M. Treadgold.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION.

Directorate.

<i>Honorary President</i>	R. A. Falconer, D.Litt. LL.D.
<i>President</i>	Prof. C. H. C. Wright.
<i>Vice-President</i>	J. P. McClelland.
<i>Secretary-Treasurer</i>	T. A. Reed.
<i>Physical Director</i>	Dr. J. W. Barton.

Directors.

Prof. M. A. Mackenzie, Hugh Gall, A. E. Cuzner, G. R. Gouinlock, W. Zimmerman, C. P. Fenwick.

The Athletic Association is now the paramount body in University athletics and has entire jurisdiction over the athletic clubs using the University name, and over their finances, members and policy, subject to the University authorities. Henceforth no financial agreement can be entered into by any such club without the sanction of the Directorate. No expenditure of any kind in connection with any such club can be made without the written order of the Secretary-Treasurer of the Directorate.

UNIVERSITY OF TORONTO, STUDENTS' ADMINISTRATIVE COUNCIL.

<i>President Engineering Society</i>	W. L. Dobbin.
<i>Chairman of Athletic and Discipline Committee</i>	J. R. Kirby.
<i>Third Year Representative</i>	H. R. Nicholson.
<i>Second Year Representative</i>	J. H. McVean.
<i>First Year Representative</i>	L. J. Seibert.

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the University, at a cost of from four dollars and a half a week upwards for comfortable lodging with board; or rooms may be rented at a cost from one dollar and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

UNIVERSITY RESIDENCES.

By the generosity of Mr. and Mrs. E. C. Whitney and other friends, the University can now offer to some hundred and fifty men the peculiar advantages of residential life and excellent accommodation within its own grounds. The Residence, opened in November, 1908, consists of three Houses situated on the north side of Hoskin Avenue, opening upon a quadrangle, the fourth side of which is formed by Devonshire Place. They stand about two hundred yards to the north of University College and of the University Dining Hall and close to the University Gymnasium and Athletic Field. The buildings are known as the South, East and North Houses.

Each House contains twenty-four single rooms, one single suite, one double room and eleven suites, a suite comprising a study and two bedrooms. A large room in each building, with an open hearth and a library has been set aside as a common room. A lavatory with hot and cold shower baths is provided for every eight men. The buildings are heated by steam and lighted by electricity.

The University supplies the table, chairs, book-case, chiffonier, bed, mattress, pillows, linen and window shades for each room; it is prepared to furnish a drop-light for a nominal rental.

Each occupant is charged \$2.50 room-rent per week, payable to the Bursar four weeks in advance. The charge for each single suite is \$3.50 per week. These charges cover heat, light, house-service, house-laundry, and the use of the telephone. There is no separate dining hall connected with the Residence, but board may be obtained at the adjacent University Dining Hall for \$3.25 per week.

Applications for rooms must be made in writing to the Secretary of the Residence Committee (address the Registrar's Office) and must be accompanied by a deposit of \$5.00. This deposit will be returned if the application be not granted, and will be forfeited if a room is assigned to the applicant and not taken by him, unless notice of his refusal of the room

be received by the Secretary in writing before September 8th. It will be returned in full at the end of the College year if the room key be given back and the room and furniture left in a satisfactory condition. The following principles govern the allotment of rooms: (i) In order to be assigned a room in the Residence, either before or during the session, a student must have obtained standing at the previous spring examination, with not more than *one* condition against him. (ii) The rooms in each House will be distributed proportionately between the various Faculties and Years. (iii) A limited number of rooms will be reserved for members of the incoming First Year until September 18th. (iv) Applications will be considered in order of priority.

The University lays down three general rules, designed to prevent hazing, the use of intoxicants and gambling. The students in each House shall elect a House Committee, which is entrusted by the University with the making and enforcing of any other needed rules and with the maintenance of order. A member of the Faculty resides in each House to act as friend and adviser to the men in residence.

STUDENTS IN ATTENDANCE.

SESSION 1915-1916.

First Year.

3	Brickenden, W. R.....	Toronto	§1	Houston, F. C. A.....	Toronto
5	Brody, D.....	Toronto	3	Huycke, F. G.....	Toronto
1	Brown, W. J..	St. John's, N. F.	7	Illman, N. H.....	Chatham
4	Bussell, E. I.....	Toronto	1	Irvin, W. F.....	Toronto
1	Caldwell, H. J.....	Toronto	7	Jenkins, C. F.....	Thamesford
3	Campbell, T. W..	Smith's Falls	3	Lesperance, L. J.....	Essex
§1	Carruthers, K. L.....	Toronto	5	Logan, I. M....	Niagara Falls
1	Cavana, E. L.....	Orillia	7	Lyon, G. M.....	Barrie
3	Caven, W. T.....	Toronto	1	McMurtry, L. C.....	London
7	Centner, M. H.....	Toronto	4	McPherson, C. D. A.	Woodstock
§5	Chantler, H. M.....	Toronto	1	MacIntyre, W. B....	Belmont
7	Clarry, A. R.....	Locust Hill	1	MacKenzie, J. A.....	Toronto
1	Cleary, J. L.....	Ottawa	1	MacLean, D. G.....	London
5	Corman, H. E.....	Caledonia	1	MacNicol, N.....	Humber Bay
7	Coulter, S. L.....	Windsor	1	Macqueen, C. B.....	Toronto
5	Coyne, B.....	Chesterville	§2	Maguire, J. R.....	Toronto
7	Crowe, H. L.....	Toronto	§3	Malcolm, F. R....	Locust Hill
§4	Crowell, C. W.	Lunenburg, N.S.	7	Manning, C. G..	Bowmanville
1	Culliton, P. J.....	Stratford	1	Metcalfe, W. F.....	Hamilton
7	Dancey, W. A.....	Goderich	7	Michell, A. V.....	Dublin
7	Dignam, H. M.....	Toronto	7	Miller, B. H.....	Stouffville
5	Downey, F. P.....	Northwood	8	Milne, C. P.....	Toronto
2	Drybrough, J.....	Sudbury	7	Milne, J. W.....	Belleville
7	Dunn, E. A.....	Chatham	1	Mix, A. E....	Los Angeles, Cal.
7	Durand, R.....	Toronto	1	Monteith, J. C.....	Stratford
5	Elliot, C. R.....	Toronto	7	Morris, W. G.....	Sarnia
8	Fairbrother, E. C.....	Toronto	§2	Morton, C. O.....	Toronto
1	Foley, W. J.....	Ottawa	3	Mueller, H. H.....	Toronto
§7	Gardner, R. T.....	Toronto	§1	Parsons, C. S.....	Cochrane
§7	Givens, H. F.....	Beaverton	1	Paterson, E. L.....	Rocklyn
7	Godfrey, S.....	Toronto	3	Patterson, L.....	St. Mary's
5	Halladay, A. H.....	Fordwich	§1	Pearson, H.....	Todmorden
4	Hames, C. O. R.,		§7	Philip, E. B.....	Brockville
	Penetanguishene		5	Phillips, A. M.....	Toronto
7	Hamilton, A. E.....	Toronto	1	Pollock, F. J.....	Almonte
7	Harkins, J. M.....	Toronto	2	Purdy, H. E.....	Port Perry
1	Harman, W.....	Zephyr	7	Reid, W. M.....	Vinemount
7	Heal, J. A.....	Toronto	3	Richardson, F. C.....	Toronto
§6	Heatley, A. H.....	Brampton	1	Riehl, W. H.....	Stratford
7	Hess, J. E.....	Zurich	§1	Riley, G. W....	St. Catharines
1	Hopper, G. H.....	Toronto	7	Rogers, J. H.....	Toronto

§ Withdrew during the session for military service.

7 Rose, H. Sarnia	7 Thompson, H. Owen Sound
3 Rosevear, S. W. ... Port Arthur	§7 Thompson, R. J. Toronto
7 Seibert, P. T. Southampton	7 Turnbull, A. G. Galt
1 Smith, C. T. London	1 Ure, D. G. Woodstock
7 Spencer, H. S. Picton	1 Vardon, L. M. Weston
7 Stalker, W. D. Simcoe	§7 Ward, H. G. Toronto
1 Strathearn, D. K. C. ... Midland	3 Weicker, J. J. Toronto
7 Tansey, J. R. ... Brookfield, Ill.	6 Wood, H. K. Brantford
1 Tanton, J. F. London	3 Yates, W. S. Goldenburgh
7 Tennyson, A. L. Port Perry	7 Young, H. G. Ellesmere

Second Year.

6 Affleck, R. D. Toronto	3 McCreery, H. J., Vancouver, B.C.
6 Affleck, J. K. Toronto	1 McDonald, N. G. ... Sunderland
1 Angus, J. C. Toronto	1 McEachern, K. J. ... Alvinston
1 Birdsall, E. Toronto	§1 McGavin, P. L. Toronto
1 Bishop, C. A. Toronto	1 McGee, L. Toronto
3 Booz, F. B. Toronto	3 McIntyre, P. F. Perth
1 Breen, J. M. Long Branch	7 McLeod, E. W. Embro
1 Brown, W. G. Motherwell	§7 McVean, J. H. Toronto
7 Brown, W. D. ... Forester's Falls	7 Macpherson, G. L. ... Markdale
§7 Bryant, G. F. Midland	1 Maddock, C. O. Inwood
1 Burton, H. R. Toronto	1 Mitchell, R. C. London
1 Campbell, F. W. Toronto	4 Mollard, W. A. Toronto
1 Carmichael, A. H. Toronto	5 Musgrave, J. E. T. Toronto
§6 Chamberlain, K. H. ... Ottawa	1 Nixon, W. H. Toronto
§3 Connor, R. A. ... Campbellford	1 Norval, T. H. Brampton
2 Crane, J. W. Newark, N.J.	3 O'Flaherty, J. G. London
1 Darling, O. G. Toronto	7 Orr, W. H. Toronto
§3 Dickenson, M. E. ... Hamilton	§1 Parker, W. J. Toronto
7 Duff, C. K. Hamilton	§1 Pearce, G. M. Toronto
1 Elliott, H. J. Toronto	§7 Penhale, T. W. Exeter
1 Ellis, F. D. Toronto	§1 Pepler, S. H. Toronto
1 Fairclough, H. W. J. ... Hamilton	3 Peters, J. H. Toronto
5 Fasken, J. E. Belgrave	§1 Rayner, G. V. Hamilton
6 Forman, J. H. Grimsby	2 Richardson, C. Cleveland, Ohio
7 Forster, C. Kingsville	3 Robertson, W. D. Toronto
§1 Garvie, J. A. Toronto	§1 Robinson, D. A. ... Leamington
§7 Gemmel, K. S. Clarkson's	1 Rovsky, J. Toronto
3 Gorrie, H. T. Toronto	1 Sagar, W. L. Toronto
4 Gouinlock, G. R. Toronto	1 Samuel, M. Toronto
6 Hancock, C. W. Hamilton	§5 Schell, M. D. Woodstock
1 Harrison, R. Birch Cliff	1 Scott, C. R. North Bay
4 Hume, A. G. Toronto	1 Scott, D. G. Toronto
7 Johnston, F. E. Mull	7 Shephard, G. R. Toronto
§1 Johnston, S. H. ... Burgessville	1 Simpson, F. W. Thornhill
1 Julian, F. T. Castlemore	7 Smith, W. M. Brantford
§7 Kayler, K. D. Toronto	§7 Souter, J. M. Hamilton
1 Kearns, N. H. Toronto	1 Speight, W. A. Toronto
§1 Langford, J. A. ... Calgary, Alta.	1 Stalker, C. H. Toronto
1 Latham, G. K. ... Scarboro Jct.	1 Sweetman, A. K. Toronto
4 McAvoy, O. H. Stouffville	1 Taylor, F. H. Toronto
7 McClelland, J. P. Arthur	7 Tracy, G. F. Toronto
§2 McClenaghan, V. S. C. ... Ottawa	

§ Withdrew during the session for military service.

3 Weir, M. L. Toronto	§1 Wood, F. A. Toronto
§7 Willey, C. M. Kingsville	7 Woonton, W. G. London
§3 Williams, P. E. Toronto	4 Young, T. J. Toronto

Third Year.

§1 Ball, O. V. Toronto	5 Macdonald, G. G. Toronto
4 Banigan, J. Toronto	3 McCandlish, S. G. Hamilton
§7 Barbour, R. A. London	2 McClelland, H. L. Cooksville
1 Berry, A. E. St. Mary's	§1 McEwen, G. A. Regina, Sask.
1 Bothwell, R. S. C. Toronto	3 McIlhargey, P. E. Stratford
7 Brown, H. S. Lansing	4 McLellan, T. W. Harriston
7 Bryans, F. M. Toronto	1 Manning, R. C. Hamilton
7 Bumstead, S. W. Owen Sound	4 Mathers, A. S. Waterloo
1 Burn, G. A. H. Janetville	1 Moorehouse, E. L., Medicine Hat, Alta.
7 Burton, C. E. Kirkton	7 Nichol, W. J. Dunnville
1 Christie, F. C. Yorkton, Sask.	-§1 Nicholson, H. R. Hamilton
7 Colleran, J. C. Port Arthur	1 O'Brien, J. E. Toronto
1 Coon, H. F. Hamilton	7 Offerhaus, W. A. R. Toronto
1 Corman, E. H. Hamilton	1 Parr, H. A. Calgary, Alta.
§1 Crysler, R. A. Toronto	1 Ratz, R. D. Elmira
1 Dale, W. P. Brampton	7 Reed, H. Toronto
5 Dickson, J. V. Toronto	1 Ryan, T. L. Brantford
1 Dowling, H. L. Toronto	§1 Shoebottom, L. R. London
§1 Eby, H. Yorkton, Sask.	1 Smith, E. E. Sault Ste. Marie
1 Fraser, J. A. Ilderton	7 Smithson, E. W. London
1 Gilley, J. R., New Westminster, B.C.	3 Snider, A. M. Waterloo
2 Gilley, E. R., New Westminster, B.C.	1 Stephenson, G. E. Varna
§1 Graham, D. S. Inglewood	3 Swan, A. W., Edinburgh, Scotland
7 Gram, J. I. Weston	1 Taylor, M. S. Regina, Sask.
1 Greatrex, W. K. Toronto	1 Thomson, A. P. Toronto
7 Hanly, A. F. Almonte	1 Tilston, C. E. Toronto
2 Hanmer, G. Toronto	7 Titus, O. W. Gore Bay
3 Harris, A. B. Toronto	2 Tomlinson, B. D. Langstaff
§1 Hawkey, R. R. Grimsby	1 Topping, V. Toronto
§3 Henderson, M. G. Tara	7 Tufford, A. A. Hamilton
6 Honeywell, W. B. Tyrone	7 Tuttle, H. A. Niagara Falls
2 Howes, E. A. Harriston	5 Tyrrell, E. J. Toronto
§1 Hughes, C. A. Mimico Beach	§3 Vaughan, O. D. Toronto
§1 Hunter, W. H. Toronto	§1 Wait, G. E. Ottawa
1 Hurlburt, R. W. Mitchell	§2 Wallace, H. D. Toronto
7 Hutcheson, G. F. Huntsville	4 Watson, H. R. Toronto
1 Ingersoll, L. H. Woodstock	1 Whately, G. A. Thornbury
1 Johnston, E. W. Harriston	§1 Willmott, L. E. Toronto
7 Johnston, M. Clayton	1 Wood, G. Kincardine
6 Knight, A. G. Toronto	§1 Wood, N. C. Kamloops, B.C.
7 Levesque, L. Chicoutimi, Que.	

Fourth Year.

§1 Allan, E. B. Toronto	8 Boyd, D. Toronto
7 Ball, F. W. London	3 Breuls, H. E. Toronto
§1 Barnes, L. F. Hamilton	5 Brown, N. B. Toronto
1 Bemrose, B. W. Toronto	§3 Chapman, J. R., Sault Ste. Marie
5 Birrell, W. G. Pinkerton	7 Cumming, K. Turnerville

§ Withdrew during the session for military service.

3 Cunningham, J. N., Moose Jaw, Sask.	1 Ney, C. H. Aurora
1 Dale, R. S. London	7 Nott, G. E. London
7 Dandeno, L. G. Hespeler	1 O'Callaghan, E. A. Cornwall
3 Delisle, J. L. Chicoutimi, Que.	6 Oliver, C. E., New Westminster, B.C.
1 Dobbin, W. L. Toronto	6 O'Reilly, W. H. Toronto
§1 Eastwood, J. H. Peterboro	§1 Powell, N. L. Delhi
7 Flegg, R. L. Montreal	§1 Pringle, J. E. Hamilton
1 Gardner, D. B. Toronto	7 Richmond, J. Smith's Falls
7 Gurnett, E. G. Owen Sound	§1 Rose, H. C. Guelph
1 Gurofsky, M. Toronto	1 Ross, S. R. Toronto
1 Hagedorn, G. C. Berlin	7 Ross, S. W. Toronto
1 Hare, R. M. Toronto	5 Rothwell, H. E. Toronto
§1 Harron, L. W. Toronto	3 Russell, J. P. Toronto
§1 Hastings, C. E. Toronto	1 Scott, W. B. Toronto
§4 Hoidge, R. T. C. Toronto	1 Seaborne, R. L., La Tuque, Que.
7 Hubbert, S. J. Toronto	1 Sievwright, R. L. Windsor
1 Jackson, K. B., Manchester, Eng.	4 Skinner, J. L. Toronto
7 Karn, H. C. Woodstock	7 Smelser, W. A. Hannon
7 King, G. F. Simcoe	3 Smith, C. A. Desbarats
1 Kirby, J. R. Toronto	1 Stark, W. H. Toronto
§1 Kirby, R. W. Toronto	1 Sureda, J. A. Utuaado, Porto Rico
3 Kirn, R. W. Peterboro	§1 Tremayne, J. E. Sutton West
6 Krug, S. J. Chesley	5 Ward, F. W. Toronto
§1 Lee, L. A. C. Toronto	1 Ward, R. C. Toronto
2 McCrodan, B. A. Belleville	§7 Wells, A. R. Blyth
3 Macdonald, R. A. Stratford	7 Wepler, H. S. Hanover
1 Margison, O. Victoria, B.C.	7 Widdicombe, A. E., St. Catharines
1 Mitchell, W. B. London	
3 Newcombe, J. C. Toronto	

Candidate for Degree of M.A.Sc.

Parker, G. C.	Toronto
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Students of other Faculties taking Instruction in Assaying, Surveying, etc.

Acton, L. T.	Toronto
Johnston, R.	Toronto
Linton, M.	Toronto
McCallum, A. W.	Smith's Falls
Mitchell, F.	Port Hope
Parker, H. A.	Havelock

Summary.

First Year Students.	101
Second Year Students.	89
Third Year Students.	82
Fourth Year Students.	66
Students of Other Faculties.	6
Candidate for M.A.Sc. Degree.	1

 345

§ Withdrew during the session for military service.

Scholarship.

Awarded by the Boiler Inspection and Insurance Co. of Canada for General Proficiency in the Third Year in Mechanical Engineering.

1912. A. S. Anderson	1913. E. D. W. Courtice
1914. C. G. Davey	1915. L. L. Youell

Degree of Master of Applied Science (M.A.Sc.).

1915. Avery, C. R.	1915. Robertson, C. S.
1914. Murdie, W. C.	1915. Rolfson, O.
1915. Parkinson, N. F.	1915. Treloar, G. E.

PROFESSIONAL DEGREES AWARDED SINCE 1910.

Degree of Civil Engineer (C.E.).

1915. Bennett, G. A.	1913. James, E. A.
1915. Challies, J. B.	1913. Marrs, C. H.
1913. Dallyn, F. A.	1915. Smith, A.
1915. Davison, A. E.	1915. Stayner, D. S.
1914. Gillespie, P.	1911. Swan, W. G.
1914. Hill, S. N.	1914. Young, C. R.
1914. Hogg, T. H.	

Degree of Mining Engineer (M.E.).

1912. Burwash, L. T.	1910. McMillan, J. G.
1915. Campbell, A. D.	1915. Neilly, B.
1913. Forbes, D. L. H.	

Degree of Mechanical Engineer (M.E.).

1915. Campbell, A. M.	1913. Manson, G. J.
1913. Christie, A. G.	1913. Smart, R. S.
1913. Darling, E. H.	

Degree of Electrical Engineer (E.E.).

1913. Mitchell, P. H.	1914. Sara, R. A.
1915. Palmer, C. E.	

GRADUATES.

Graduates are requested to inform the Secretary of changes in their addresses.

1881.

1. J. L. MORRIS, C.E., O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.

1882.

1. D. JEFFREY, Windsor, Missouri
Contractor.
1. J. H. KENNEDY, C.E., O.L.S., Vancouver, B.C.
Chief Engineer, Great Northern Ry.
1. J. McAREE, B.A.Sc., D.T.S. (deceased).

1883.

1. D. BURNS, O.L.S., A.M. Can. Soc. C.E. (deceased).
1. G. H. DUGGAN, M. Can. Soc. C.E., Lachine, Que.
Vice-President and Chief Engineer, Dominion Bridge Co., Ltd.
1. J. W. TYRRELL, C.E., D.L.S., Hamilton, Ont.
Tyrrell & MacKay, Consulting Engineers and Surveyors.

1884.

1. W. C. KIRKLAND (deceased).
1. J. McDOUGALL, B.A. (deceased).
1. A. R. RAYMER, Pittsburgh, Pa.
Assistant Chief Engineer, P. & L. E. Ry.
1. JAMES ROBERTSON, O.L.S., Toronto, Ont.
Commissioner, The Canada Co.
1. E. W. STERN, M. Am. Soc. C.E., 101 Park Ave., New York
Consulting Engineer.

1885.

1. J. F. BLEAKLEY, Bowmanville, Ont.
Civil Engineer.
1. H. J. BOWMAN, D. & O.L.S., M. Can. Soc. C.E., Berlin, Ont.
Bowman & Connor.
1. E. E. HENDERSON, O.L.S., Henderson, P.O., Me.
Civil Engineer.
1. B. A. LUDGATE, O.L.S., Pittsburgh, Pa.
Assistant Engineer, P. & L. E. Ry.
1. O. McKAY, O.L.S., Walkerville, Ont.
Civil Engineer and Surveyor.

1886.

1. A. M. BOWMAN, D.L.S., Pittsburgh, Pa.
Pennsylvania Contracting Co.
1. E. B. HERMON, D. & O.L.S., Vancouver, B.C.
Assistant Engineer Vancouver Power Co.
1. ROBERT LAIRD, O.L.S., Haileybury, Ont.
Laird & Routley, Engineers and Surveyors.
1. T. KENNARD THOMSON, D.Sc., C.E., M. Can. Soc. C.E., M. Am. Soc. C.E., Hudson Terminal Building, New York
Consulting Engineer.
1. H. G. TYRRELL, C.E., A.M. Can. Soc. C.E., 817 Hinman Ave., Evanston, Ill.
Consulting Engineer.

1887.

1. J. C. BURNS (deceased).
1. A. E. LOTT, Los Angeles, Cal.
Consulting Railway Engineer.
1. A. L. McCULLOUGH, O.L.S., B.C.L.S., A.M. Can. Soc. C.E., Nelson, B.C.
Engineer and Surveyor.
1. F. MARTIN, M.B., O.L.S.,
Physician.
1. C. H. PINHEY, D. & O.L.S., 110 Wellington St., Ottawa, Ont.
1. J. ROGERS, O.L.S., Mitchell, Ont.
Town Engineer.

1888.

1. J. F. APSEY, O.L.S., 3 N. Calvert St., Baltimore, Md.
Assistant Division Engineer, Baltimore Sewerage Commission.
1. W. T. ASHBRIDGE, C.E., 1444 Queen St. E., Toronto, Ont.
Engineer and Surveyor.
1. EDWARD F. BALL, A.M., Can. Soc. C.E., 335 Madison Ave., New York, N.Y.
Chief Assistant Engineer of Resurveys, Land and Tax Department, N. Y. Central and Hudson River Railroad.
1. D. B. BROWN, O.L.S., Quebec, P.Q.
Locating Engineer, Transcontinental Ry. (G.T.P.)
1. C. M. CANNIFF, Toronto, Ont.
Consulting Engineer.
1. H. J. CHEWETT, B.A.Sc., C.E., A.M. Can. Soc. C.E., Cold Ash, Newbury, England
1. J. GIBBONS, D. & O.L.S., Ottawa, Ont.
Surveying Staff, Department of Interior.
1. R. McDOWALL, O.L.S., C.E., A.M. Can. Soc. C.E., Owen Sound, Ont.
Town Engineer.
1. G. W. MCFARLEN, O.L.S., Toronto, Ont.
City Engineer's Staff.
1. C. J. MARANI, Anacortes, Wash.
Designing and Consulting Structural Engineer for the Russia Cement Co.
1. G. R. MICKLE, B. A., Toronto, Ont.
Mine Assessor, Province of Ontario.
1. J. H. MOORE, O.L.S., Smith's Falls, Ont.
Town Engineer.
1. G. H. RICHARDSON, Edmonton, Alta.
Managing Director, Yellowhead Pass Coal & Coke Co.

1888—Continued.

1. K. ROSE, Curry Bldg., Toronto, Ont.
Manager, Evans Rotary Engine Co. of Canada.
1. J. E. ROSS, D. & O.L.S., Kamloops, B.C.
Surveying Staff, Department of Interior.
1. C. H. C. WRIGHT, B.A.Sc., Toronto, Ont.
Professor of Architecture, University of Toronto.

1889.

1. B. CAREY, Toronto, Ont.
1. W. J. CHALMERS, Vanport, Beaver Co., Pa.
1. W. J. CHALMERS, 13012 104th Ave., Edmonton, Alta.
Consulting Engineer.
1. W. A. CLEMENT, M. Can. Soc. C.E., South Vancouver, B.C.
Municipal Engineer.
1. G. F. HANNING, St. Eustache, Two Mountains, Quebec
Divisional Engineer, C.N.R.
1. H. E. T. HAULTAIN, C.E., Asso. Mem., I.C.E., M.I.M.M., M. Can. Soc. C.E., Toronto, Ont.
Professor of Mining Engineering, University of Toronto.
1. J. IRVINE (deceased).
1. D. D. JAMES, B.A., B.A.Sc., 6 Leuty Ave., Toronto, Ont.
Surveyor.
1. F. X. MILL (deceased).
1. H. K. MOBERLEY, D. & S.L.S., Moosomin, Sask.
District Engineer and Surveyor.
1. T. R. ROSEBRUGH, M. A., Toronto, Ont.
Professor of Electrical Engineering, University of Toronto.
1. T. WICKETT, M.D., 25 Nightingale St., Hamilton, Ont.
Physician.

1890.

5. W. E. BOUSTEAD (deceased).
1. F. M. BOWMAN, O.L.S., C.E., Pittsburgh, Pa.
Blaw Steel Const. Co.
1. M. A. BUCKE, M.E. (deceased).
1. G. D. CORRIGAN (deceased).
1. J. A. DUFF, B.A. (deceased).
1. A. B. ENGLISH (deceased).
1. N. L. GARLAND, 76 Wellington St. W., Toronto, Ont.
1. J. HUTCHEON, O.L.S., Parliament Bldgs., Toronto, Ont.
Dept. of Lands, Forests and Mines.
1. W. L. INNES, O.L.S., C.E., Simcoe, Ont.
Manager, Dominion Cannery, Ltd.
1. E. B. MERRILL, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E. Toronto, Ont.
Engineer, H.E.P.C.
1. J. R. PEDDER (deceased).
3. R. A. ROSS, E.E., 80 St. Francois Xavier St., Montreal, Que.
Consulting Electrical and Mechanical Engineer.
1. T. H. WIGGINS, O.L.S., Saskatoon, Sask.
Civil Engineer and Dom. Land Surveyor.
1. W. J. WITHROW,
On Overseas Service.

1891.

1. H. J. BEATTY, O.L.S., Pembroke, Ont.
Engineer and Surveyor.
1. T. R. DEACON, O.L.S., M. Can. Soc. C.E., Winnipeg, Man.
President and General Manager, Manitoba Bridge & Iron Works, Ltd.
1. C. W. DILL, M. Can. Soc. C.E., Winnipeg, Man.
General Manager, The National Paving Co.
5. O. S. JAMES, B.A.Sc., 6 Leuty Ave., Toronto, Ont.
1. A. LANE (deceased).
1. J. E. McALLISTER, B.A.Sc., C.E., 501 Standard Bank Bldg., Toronto, Ont.
Consulting Engineer.
3. E. B. MERRILL, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E., Toronto, Ont.
Engineer, H.E.P.C.
1. J. E. A. MOORE, C.E., Cleveland, O.
Marani & Moore, Consulting, Civil and Mechanical Engineers.
1. W. NEWMAN, O.L.S., A.M., Can. Soc. C.E. Winnipeg, Man.
Consulting Engineer and Contractor.
1. J. K. ROBINSON (deceased).
1. W. B. RUSSEL, 601 Standard Bank Bldg., Toronto, Ont.
Civil Engineer and Contractor.
1. G. E. SILVESTER, O.L.S., M. Am. Inst. M.E., Copper Cliff, Ont.
Chief Engineer, Canadian Copper Co.
1. H. D. SYMMES, Niagara Falls S., Ont.
Engineer and Contractor.

1892.

1. J. R. ALLAN, O.L.S., Renfrew, Ont.
1. T. H. ALISON, B.A.Sc., C.E., Bayonne, N.J.
Secretary and Chief Engineer, Bergen Point Iron Works.
1. A. G. ANDERSON, Port Dover, Ont.
Hardware Merchant.
1. C. FAIRCHILD, D. & O.L.S., 608 Tegler Blk., Edmonton, Alta.
Consulting Engineer and Surveyor.
1. J. B. GOODWIN, B.A.Sc., Toronto, Ont.
Assistant Hydraulic Engineer, H.E.P.C.
4. C. E. LANGLEY, Continental Life Bldg., Toronto, Ont.
Langley & Howland, Architects.
1. A. T. LAING, B.A.Sc., Toronto, Ont.
Secretary and Assistant Professor, Faculty of Applied Science, University of Toronto.
1. E. J. LASCHINGER, B.A.Sc., M.E., Johannesburg, Transvaal, S.A.
Hydraulic and Air Power Engineer, Central Mining and Investment Corporation.
5. W. L. LAWSON, B.A.Sc., Sterling, Col.
Manager Great Western Sugar Co.
3. W. A. LEE, B.A.Sc. (deceased).
1. B. McENTEE, B.A.Sc., 28 Queen St. E., Toronto
Stationer.
3. C. G. MILNE, B.A.Sc. (deceased).
1. CHAS. H. MITCHELL, B.A.Sc., C.E., Ca. Mn. Soc. C.E., M. Am. Soc. C.E., Lieut.-Col.,
On Overseas Service.
1. N. L. PLAYFAIR, Vancouver, B.C.
1. J. M. PRENTICE (deceased).
1. J. A. ROSS, Cleveland, Ohio
Designer L. S. & M. S. Railway, Engineering Office.

1892—Continued.

1. ALBERT N. SMITH, Youngstown, Ohio
Engineer, Wm. B. Pollock Co.
1. R. W. THOMSON, B.A.Sc., M.E., c/o University Club, Vancouver,
Mining Engineer. B.C.
3. A. V. WHITE, M.E., Ottawa, Ont.
Engineer, Commission of Conservation.

1893.

1. A. G. ARDAGH, Barrie, Ont.
Land Surveyor and Civil Engineer.
- 4.*H. F. BALLANTYNE, B.A.Sc., 2 West 47th St., New York, N.Y.
Architect.
1. G. L. BROWN, O.L.S., A.M. Can. Soc. C.E., Morrisburg, Ont.
Civil Engineer and Land Surveyor.
- 1.*L. C. CHARLESWORTH, D.L.S., Edmonton, Alta.
Director of Surveys for Alberta.
1. T. H. DUNN, O.L.S., Ottawa, Ont.
Water Power Branch Dept. of the Interior.
1. J. M. R. FAIRBAIRN, P.L.S., Westmount, Que.
Assistant Chief Engineer, C. P. R.
- 4.*W. FINGLAND, 334 Portage Ave., Winnipeg, Man.
Architect.
1. C. FORRESTER, Toronto, Ont.
- 1.*WALTER J. FRANCIS, C.E., M. Can. Soc. C.E., M. Am. Soc. C.E.,
232 St. James St., Montreal, Que.
Walter J. Francis & Co., Consulting Engineers.
- 3.*A. R. GOLDIE, Galt, Ont.
Manager, Goldie & McCulloch Co.
3. S. C. HANLY, Midland, Ont.
Midland Iron Works Co.
- 4.*J. KEELE, A.M., B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.
1. J. T. LAIDLAW, B.A.Sc., M.E., Cranbrook, B.C.
Consulting Mining Engineer.
3. F. L. LASH, Bandoeng, Java
Manager, Electrical Supply Co., Board of Trade Building.
1. A. L. McALLISTER, B.A.Sc., 501 Standard Bank Bldg., Toronto, Ont.
Consulting Engineer.
1. T. J. McFARLEN, Port Arthur, Ont.
Chemist, Antikokan Iron Co.
1. A. J. McPHERSON, B.A.Sc., D.L.S., Regina, Sask.
Deputy Minister of Public Works for Sask.
1. A. F. MACALLUM, B.A.Sc., C.E., Hamilton, Ont.
City Engineer.
1. W. T. MAIN, Silverton, Oregon
Division Engineer, C. & N. W. Ry.
1. V. G. MARANI, C.E., Cleveland, Ohio
Marani & Moore, Consulting, Civil and Mechanical Engineers.
1. W. MINES, B.A.Sc., Chicago, Ill.
Mechanical Engineer, Hoover & Mason.
- 3.*J. M. ROBERTSON, Montreal, P.Q.
Consulting Engineer.

*Diploma with honours.

1893—Continued.

1. R. K. RUSSEL, 1001 Traders' Bank Bldg., Toronto, Ont.
Railway Contractor.
- 1.*F. N. SPELLER, B.A.Sc., Pittsburgh, Pa.
Metallurgical Engineer, National Tube Co.
1. H. R. SQUIRE, B.A.Sc., O.L.S. (deceased).
1. W. V. TAYLOR, O.L.S., A.M. Can. Soc. C.E., Quebec, P.Q.
Quebec Harbour Commissioners.
- 1.*R. B. WATSON (deceased).

1894.

- 3.*R. W. ANGUS, B.A.Sc., Toronto, Ont.
Professor of Mechanical Engineering, University of Toronto.
1. H. F. BARKER, Toronto, Ont.
1. A. T. BEAUREGARD, B.A.Sc., Darien, Conn.
1. A. E. BERGEY, Pittsburgh, Pa.
Assoc. Professor, Carnegie Inst. of Technology.
3. D. G. BOYD, Toronto, Ont.
Department of Lands and Mines, Parliament Buildings.
3. W. A. BUCKE, Toronto, Ont.
District Manager, Canadian General Electric Co.
1. J. CHALMERS, O.L.S., A.M. Can. Soc. C.E., Edmonton, Alta.
Consulting Engineer, 13012 101st Avenue.
- 4.*J. A. EWART, B.A.Sc., 415 Booth Bldg., Ottawa, Ont.
Architect.
3. W. J. HERALD, B.A.Sc., 190 Whitney Ave., Sydney, N.S.
3. H. E. JOB, B.A.Sc., Hamilton, Ont.
Manager, Toronto and Hamilton Electric Co.
3. A. C. JOHNSTON, B.A.Sc., M.E., Philadelphia, Pa.
Vice-President and Chief Engineer, The J. M. Dodge Co.
1. S. M. JOHNSTON, B.A.Sc., B.C.L.S., Gordon Block, Stratford, Ont.
1. J. E. JONES, Toronto, Ont.
Street Cleaning Dept., City Hall.
3. N. M. LASH, Montreal, P.Q.
Chief Engineer, Bell Telephone Co.
- 1.*A. L. MCTAGGART, B.A.Sc., 703 Arch St., Pittsburg, Pa.
Mechanical Engineer.
- 3.*W. MINTY, B.A.Sc., Blackburn, Eng.
With Messrs. Yates & Thom, Ltd., Engineers.
3. C. J. NICHOLSON, Hamilton, Ont.
Assistant Engineer, Toronto, Hamilton & Buffalo Ry.
1. H. ROLPH, Montreal, Que.
Chief Engineer, John S. Metcalf Co., Ltd.
1. J. D. SHIELDS, B.A.Sc., Toronto, Ont.
Sewer Engineer, Staff of City Engineer.
1. ANGUS SMITH, C.E., O.L.S., A.M. Can. Soc. C.E., Prince Albert, Sask.
City Engineer.
3. A. K. SPOTTON, Galt, Ont.
Chief Engineer, Goldie & McCulloch Engine Works.
3. R. T. WRIGHT, B.A.Sc., East Pittsburgh, Pa.
Engineering Department, Westinghouse Machine Co.

*Diploma with honours

1895.

1. J. ARMSTRONG, B.A.Sc., LePas, Man.
Chief Engineer of the Hudson Bay Ry.
3. A. E. BLACKWOOD, 30 Church St., New York
Manager New York Office, Sullivan Machinery Co.
1. E. J. BOSWELL, D.L.S., Montreal, Que.
With C. P. R.
3. G. BREBNER (deceased).
3. W. M. BRODIE, B.A.Sc.,
On Overseas Service.
3. L. L. BROWN, The Woolworth Bldg., New York
Vice-President, The Foundation Co.
4. R. J. CAMPBELL, Chicago, Ill.
Artist, Chicago Tribune.
3. A. W. CONNOR, B.A., C.E., 36 Toronto St., Toronto, Ont.
Bowman & Connor, Consulting Engineers.
1. J. S. DOBIE, B.A.Sc., O. & D.L.S., Thessalon, Ont.
President, O. L. S. Assoc.
1. F. W. GUERNSEY, Trail, B.C.
Consolidated Mining and Smelting Co.
- 4.*A. H. HARKNESS, B.A.Sc., Toronto, Ont.
*Consulting Structural Engineer, Harkness & Oxley,
Confederation Life Building.*
3. H. S. HULL, B.A.Sc., Johnstown, Pa.
Structural Drawing, Cambria Steel Co.
- 3.*J. MCGOWAN, B.A., B.A.Sc., Toronto, Ont.
Associate Professor of Applied Mechanics, University of Toronto.
3. W. N. MCKAY, Georgetown, Ont.
Manager of Bank of Hamilton.
3. H. L. MCKINNON, B.A.Sc., Cleveland, Ohio
Brown Hoisting Machinery Co.
1. W. W. MEADOWS, D. & O.L.S., Maple Creek, Sask.
Department of Public Works.
1. F. J. ROBINSON, D. & O.L.S., Regina, Sask.
Deputy Minister of Public Works, Saskatchewan.
3. F. T. STOCKING, Toronto, Ont.
Hydro-Electric Commission.
3. R. C. C. TREMAINE, B.A.Sc. (deceased).

1896.

- 2.*J. W. BAIN, B.A.Sc., Toronto, Ont.
Associate Professor of Applied Chemistry, University of Toronto.
2. L. T. BURWASH, M.E., Winnipeg, Man.
Manager, Western Supply Co.
- 3.*G. M. CAMPBELL, Lynn, Mass.
Electric Co.
2. J. A. DECEW, B.A.Sc., McGill Bldg., Montreal, Que.
Consulting Chemical Engineer, Pres. Process Engineers Ltd.
- 3.*H. P. ELLIOTT, B.A.Sc., E.E., London, Ont.
Consulting Electrical Engineer.
3. W. C. GURNEY, Toronto, Ont.
Vice-President, Gurney Foundry Co., Ltd.
- 3.*H. V. HAIGHT, B.A.Sc., Sherbrooke, P.Q.
Chief Engineer, Canadian Ingersoll Rand Drill Co. Ltd.

*Diploma with honours.

1896—Continued.

1. W. F. LAING (deceased).
3. R. R. LAWRIE (deceased).
3. C. MACBETH, B.A.Sc. (deceased).
3. J. A. MACMURCHY, 1315 Elm St., Wilkinsburg, Pa.
Chief Draftsman, Turbine Dept., Westinghouse Machine Co.,
1. T. MARTIN, B.A.Sc. Moose Jaw, Sask.
Assistant Divisional Engineer, C. P. R., Western Division.
3. R. R. SCHEIBE, Toronto, Ont
Sales Manager, Brigdens, Ltd.

1897.

2. E. ANDREWES, B.Sc., A.M.I.C.E., Portmadoc, N. Wales
Resident Engineer, Maenofferen Slate Quarry Co., Ltd.
- 2.*J. A. BOW, Great Falls, Mont.
B. & M. Smelter.
1. H. S. CARPENTER, B.A.Sc., O.L.S., Regina, Sask.
Superintendent of Highways, Department of Public Works.
5. H. W. CHARLTON, B.A.Sc., Ottawa, Ont.
Examiner, Patent Office.
- 4.*E. A. FORWARD, A.M. Can. Soc. C.E., Montreal, Que.
With Haney, Quinlan & Robertson.
- 3.*A. T. GRAY, B.A.Sc., Schenectady, N.Y.
Designing Engineer on Steam Turbines, General Electric Co.
3. W. A. B. HICKS, Philadelphia, Pa.
4. C. F. KING, 356 Main St., Winnipeg, Man.
The Great West Perm. Loan Co.
1. H. W. PROUDFOOT (deceased).
- 2.*A. H. A. ROBINSON, B.A.Sc., M.A.I. M.E., Haileybury, Ont
Mine Inspector.
4. W. F. SCOTT, Dunnville, Ont.
Structural Engineer and Consulting Architect.
- 3.*W. R. SMILEY, B.A.Sc., Cleveland, Ohio
With Wellman-Seaver-Morgan Engineering Co.
- 2.*W. W. STULL, B.A.Sc., O.L.S., Sudbury, Ont.
Surveyor and Mining Engineer.
- 1.*M. B. WEEKES, B.A.Sc., D.L.S., Regina, Sask.
Department of Public Works.
1. E. A. WELDON, 711 McIntyre Block, Winnipeg, Man.
Investment Broker.

1898.

1. W. H. BOYD, B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.
2. W. E. H. CARTER, B.A.Sc., Box 248, Wilkie, Sask.
Consulting Mining Engineer.
3. E. H. DARLING, M.E., A.M. Can. Soc. C.E., Hamilton, Ont.
Resident Engineer East Hamilton Plant, Hamilton Bridge Works Co.
1. W. F. GRANT, B.A.Sc., Sault Ste. Marie, Ont.
City Engineer.
1. J. S. KORMANN, B.A.Sc., Toronto, Ont.
Manager, Kormann Brewing, Ltd.

*Diploma with honours.

1898—Continued.

3. J. E. LAVROCK, Vancouver, B.C.
Draftsman, Hermon & Burwell.
4. D. MACKINTOSH, B.A.Sc., B.Arch., Bennington, Vt.
Chief Superintendent F. M. Andrews & Co., Metropolitan Tower.
- 1.*F. W. MCNAUGHTON, O.L.S., Calgary, Alta.
C.P.R., Dept. of Natural Resources.
1. J. H. SHAW, O.L.S., North Bay, Ont.
Surveyor and Engineer.
3. A. E. SHIPLEY, B.A.Sc., Nelson, B.C.
Manager, Nelson Coke & Gas Co.
- 3.*F. C. SMALLPIECE, B.A.Sc., 1233 2nd St. E., Calgary, Alta.
Chief Engineer, General Supplies Co.
- 1.*R. W. SMITH, P.L.S., Revelstoke, B.C.
Surveyor.
- 1.*J. A. STEWART, M.A., Toronto, Ont.
Chief Engineer, Toronto Structural Steel Co.
- 1.*H. L. VERCOE, 109 McCaul St., Toronto, Ont.
3. T. A. WILKINSON, New York, N.Y.
Statistician, Westinghouse Church Kerr Co.
3. D. A. WILLIAMSON, B.A.Sc., Hamilton, Ont.
With Hamilton Bridge Works Co.

1899.

- 3.*T BARBER, Meaford, Ont.
Hydraulic Engineer, Chas. Barber & Sons.
2. J. T. M. BURNSIDE, B.A.Sc. (deceased).
3. L. B. CHUBBUCK, B.A.Sc., E.E., Hamilton, Ont.
Engineer, Canadian Westinghouse Co.
2. G. A. CLOTHIER, Stewart, B.C.
Mining Engineer and Surveyor.
1. C. COOPER, Carlyle, Sask.
2. P. W. COULTHARD, B.A.Sc.,
On Overseas Service.
3. J. A. CRAIG, B.A.Sc., Toronto, Ont.
Office of Willis Chipman, C.E.
2. J. C. ELLIOTT, Kelso, Ont.
3. W. E. FOREMAN, B.A.Sc., Pittsburgh, Pa.
Construction Dept., Westinghouse Electric and Mfg. Co.
3. E. GUY, B.A.Sc., Toronto, Ont.
- 3.*W. ALMON HARE, B.A.Sc., A.M., Can. Soc. C.E., Toronto, Ont.
President, The Hare Engineering Co.
1. R. LATHAM, B.A.Sc., Hamilton, Ont.
Chief Engineer, T. H. & B. Ry.
3. W. MONDS, B.A.Sc.,
On Overseas Service.
1. J. PATTERSON, B.A., Toronto, Ont.
Physicist, Dominion Observatory.
3. A. S. H. POPE, B.A.Sc., Portland, Oregon
Pope & Wilcox, Electrical and Mechanical Engineers.

*Diploma with honours.

1899—Continued.

2. G. E. REVELL, B.A.Sc. (killed in action, France, 1915).
- 3.*E. RICHARDS, B.A.Sc., Ottawa, Ont.
Customs Appraiser.
3. G. A. SAUNDERS, Toronto, Ont.
Asst. Engineer, Hydro-Electric Commission.
- 1.*T. SHANKS, B.A.Sc., D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
- 1.*D. C. TENNANT, B.A.Sc., Lachine Locks, Que.
Chief Draftsman with Dominion Bridge Co.
3. W. W. VANEVRY, Sault Ste. Marie, Ont.
City Engineer.
3. W. E. WAGNER, B.A.Sc., Toronto, Ont.
Engineer, Toronto Structural Steel Co.
2. G. H. WATT, D.L.S., Ottawa, Ont.
Dominion Land Surveyor.
3. E. YEATES, London, Ont.
Manager, London Manufacturing and Machine Co.

1900.

1. J. L. ALLAN, M. Can. Soc. C.E., Dartmouth, N.S.
Office Engineer, Dartmouth Branch Intercolonial Ry.
2. E. G. R. ARDAGH, B.A.Sc., Toronto, Ont.
Asst. Professor of Applied Chemistry, University of Toronto.
3. J. A. BAIN, Ottawa, Ont.
Structural Engineer, Dept. of Public Works of Canada.
3. J. H. BARLEY, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Electric and Manufacturing Co.
- 2.*M. C. BOSWELL, M.A., Ph.D., Toronto, Ont.
Asst. Professor of Organic Chemistry, University of Toronto.
1. L. T. BRAY, D. & O.L.S., Amherstburg, Ont.
District Engineer and Surveyor.
3. J. CLARK, Toronto, Ont.
Turnbull Elevator Mfg. Co.
2. J. E. DAVISON, B.A.Sc., Winnipeg, Man.
Engineering Staff, Canadian Northern Ry.
3. E. D. DICKINSON, Schenectady, N.Y.
With General Electric Co.
3. G. W. DICKSON, B.A.Sc., Grand Mere, Que.
With Laurentide Paper Co.
- 2.*H. A. DIXON, B.A.Sc., M.L.S., Jasper, Alta.
District Engineer, Canadian Northern Railway.
2. C. H. FULLERTON, O.L.S., New Liskeard, Ont.
Engineer and Surveyor.
3. W. S. GUEST, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.
3. W. HEMPHILL, B.A.Sc., E.E., Buffalo, N.Y.
Superintendent, Cataract Power & Conduit Co.
2. S. E. M. HENDERSON, Toronto, Ont.
Canadian General Electric Co.
3. J. A. HENRY, Schenectady, N.Y.
Designing Engineer, General Electric Co.

*Diploma with honours.

1900—Continued.

2. H. S. HOLCROFT, B.A.Sc., D.L.S.,
On Overseas Service.
3. H. A. JOHNSON, Toronto, Ont.
Manager, Johnson Oil Engine Co., Ltd.
3. J. C. JOHNSTON, Boston, Mass.
Plant Inspector, Warren Bituminous Paving Co.
- 2.*J. A. JOHNSTON, B.A.Sc., Ignace, Ont.
Contractor.
2. R. E. MCARTHUR, Lethbridge, Alta.
2. J. G. McMILLAN, B.A.Sc., M.E.,
On Overseas Service.
3. L. HAUN MILLER, Cleveland, Ohio
Sales Agent, Bethlehem Steel Co.
2. E. V. NEELANDS, B.A.Sc., New Guiana, S. America
Manager, Peters Mines.
- 1.*E. H. PHILLIPS, D.L.S., Saskatoon, Sask.
Phillips & Phillips, Civil Engineers and Surveyors.
2. J. R. ROAF, B.A.Sc., Bickerdike, Alta.
Yellow Head Pass Coal Co.
- 3.*C. H. E. ROUNTHWAITE, Sault Ste. Marie, Ont.
Chief Draftsman Algoma Central & Hudson Bay Ry.
2. H. W. SAUNDERS, B.A.Sc., Gary, W.Va.
Division Engineer, U. S. Coal & Coke Co.
1. A. TAYLOR, D.L.S. & M.L.S., Portage la Prairie, Man.
Engineer and Surveyor.
1. W. C. TENNANT, B.A.Sc. (deceased).
2. S. M. THORNE, B.A.Sc., Cobalt, Ont.
Manager, Trethewey Mine,
1. F. W. THOROLD, B.A.Sc., 2 Toronto St., Toronto, Ont.
F. W. Thorold Co., Ltd., Consulting Engineers and Contractors.
1. H. M. WEIR, B.A.Sc., Saskatoon, Sask.
City Engineer's Office.
3. F. D. WITHROW, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.

1901.

1. R. H. BARRETT, B.A.Sc., O.L.S. (deceased).
3. W. G. BEATTY, Fergus, Ont.
Manager, Beatty Bros., Implement Manufacturers.
3. G. M. BERTRAM, Toronto, Ont.
Business Manager, Canadian Courier.
3. W. J. BOWERS (deceased).
3. E. T. J. BRANDON, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Com.
3. W. P. BRERETON, B.A.Sc., Winnipeg, Man.
City Engineer.
3. J. T. BROUGHTON, Scottdale, Pa.
Chief Engineer, Scottdale Foundry & Machine Co.
- 3.*W. G. CHACE, B.A.Sc., Winnipeg, Man.
Chief Engineer, Greater Winnipeg Water District.
3. A. G. CHRISTIE, M.E., Baltimore, Md.
Assoc. Professor of Mechanical Engineering, Johns Hopkins University

*Diploma with honours.

1901—Continued.

3. J. R. COCKBURN, B.A.Sc., A.M. Can. Soc. C.E.,
On Overseas Service.
1. W. A. DUFF, Moncton, N.B.
Engineer of Bridges, Intercolonial Ry.
- 2.*D. E. EASON, B.A.Sc., Peterboro', Ont.
Division Engineer, Trent Valley Canal.
- 1.*S. GAGNE, B.A.Sc. (deceased).
3. N. R. GIBSON, B.A.Sc., 550 Confederation Life Bldg., Toronto, Ont.
2. A. T. E. HAMER, Wahnapiatae, Ont.
Engineering Staff, Canadian Northern Ry. Co.
1. C. HARVEY, B.A.Sc., D.L.S., C.E., B.C.L.S. Kelowna, B.C.
Consulting Engineer and Surveyor.
2. F. C. JACKSON, La Tuque, Que.
Jackson & Connelly, Contractors, N. T. C. Ry.
- 3.*R. A. LAIDLAW, C.E. Houston, Texas
Engineer and Sales Agent, Trussed Concrete Steel Co.
3. W. C. LUMBERS, Calgary, Alta.
Engineering Staff, C. P. R.
2. A. C. MACDOUGALL,
On Overseas Service.
3. A. T. C. MCMASTER, B.A.Sc., Toronto, Ont.
Engineer and Contractor.
1. G. MACMILLAN, Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
- 3.*H. G. MCVEAN, B.A.Sc., Moose Jaw, Sask.
Contractor and Engineer.
2. W. C. MATHESON, Joliette, Que.
With Mackenzie-Mann & Co.
3. H. T. MIDDLETON, Englewood Cliffs, N.J.
2. J. L. R. PARSONS, B.A., D.L.S.,
On Overseas Service.
1. G. H. POWER, Winnipeg, Man.
Western Canada Rep. of Willis Chipman, C.E.
- 3.*H. W. PRICE, B.A.Sc., Toronto, Ont.
Associate Professor of Electrical Engineering, University of Toronto
1. H. P. RUST, B.A.Sc., A.M. Can. Soc. C.E., San Francisco, Cal.
Great Western Power Co.
3. M. V. SAUER, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Greater Winnipeg Water District.
3. W. H. STEVENSON, B.A.Sc., Monadnock Block, Chicago, Ill.
Secretary Power Plant Specialty Co.
1. R. D. WILLSON (deceased)

1902.

- 3.*H. G. BARBER, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. W. J. BLAIR, B.A.Sc., D. & O.L.S., Calgary, Alta.
3. J. M. BROWN, Pittsburgh, Pa.
With Westinghouse Machine Co., Steam Turbine Dept.
3. A. G. CHRISTIE, Baltimore, Md.
Asst. Professor of Descriptive Geometry, University of Toronto.

*Diploma with honours.

1902—Continued.

2. W. G. CAMPBELL, Toronto, Ont.
 2. A. R. CAMPBELL (deceased).
 3. C. G. CARMICHAEL (deceased).
 2.*W. CHRISTIE, B.A.Sc., Prince Albert, Sask.
Dominion Land Surveyor.
 2. F. T. CONLON (deceased).
 3. H. V. CONNOR, Pittsburgh, Pa.
With Westinghouse Electric and Mfg. Co.
 2.*M. T. CULBERT (deceased).
 2. R. CUMMING, 50 Front St. East, Toronto, Ont.
General Contractor.
 1. W. E. DOUGLAS, B.A., 152 Bay St., Toronto, Ont.
Contractor.
 3.*R. J. DUNLOP, Toronto, Ont.
With Canadian Westinghouse Co.
 2. W. M. EDWARDS, B.A.Sc., Lethbridge, Alta.
Duff & Edwards.
 3. W. ELWELL (deceased).
 2. J. M. EMPEY, B.A.Sc., O.L.S., D.L.S. Calgary, Alta.
Engineer and Surveyor.
 2.*D. L. H. FORBES, M.E. Chuquicamata, Chili, South America
Chief Const. Engineer, Chili Exploration Co.
 1.*A. E. GIBSON, B.A.Sc., Toronto, Ont.
Roger Miller & Sons, Engineers and Contractors.
 3. A. C. GOODWIN, Toronto, Ont.
With Hydro-Electric Power Commission.
 3. C. P. HENWOOD, McKeesport, Pa.
Draftsman, National Tube Co.
 3. D. M. JOHNSTON, Toronto, Ont.
With Hydro-Electric Power Comm.
 2. R. H. KNIGHT, B.A.Sc., D.L.S., Edmonton, Alta.
Driscoll & Knight, Engineers and Surveyors.
 5.*F. L. LANGMUIR, B.A.Sc., Ph.D., Toronto, Ont.
Chemist, M. Langmuir Mfg. Co.
 3. A. H. MCBRIDE, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Commission.
 1. A. L. MCLENNAN, D.L.S., Toronto, Ont.
Office of York County Engineer.
 3. J. T. MACKAY, Toronto, Ont.
 3. J. F. S. MADDEN, Winnipeg, Man.
Erecting Engineering Dept., Can. Gen. Electric Co.
 3.*C. H. MARRS, C.E., Hamilton, Ont.
Hamilton Bridge Works.
 3. P. MATHISON, B.A.Sc., East Pittsburgh, Pa.
Westinghouse Electric & Manufacturing Co.
 3. R. S. MENNIE, Pittsburgh, Pa.
With Crucible Steel Co. of America.
 2. H. H. MOORE, D.L.S., A.M. Can. Soc. C.E., Calgary, Alta.
Dominion Land Surveyor and Engineer.
 1.*T. S. NASH, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
 1. G. G. POWELL, B.A.Sc., Toronto, Ont.
Assist. City Engineer.

*Diploma with honours.

1902—Continued.

- 1.*W. F. RATZ, D.L.S. (deceased).
 3. H. D. ROBERTSON, B.A.Sc., Toronto, Ont.
Miller, Cumming & Robertson, Engineers and Contractors.
 3.*D. SINCLAIR, B.A.Sc. (deceased).
 2.*I. J. STEELE, D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
 3. W. H. SUTHERLAND, B.A.Sc., Montreal, Que.
Assistant Chief Engineer, Montreal Water and Power Co.
 3.*T. F. TAYLOR, 494 Concord Ave., Toronto, Ont.
 2.*C. M. TEASDALE, Concord, Ont.
Surveyor.
 3. A. A. WANLESS, Sydney Mines, N.S.
Asst. Engineer and Shop Supt. N. S. S. & C. Co
 3. H. J. ZAHN, B.A.Sc., 235 Calumet St., Detroit, Mich.

1903.

3. H. G. ACRES, Toronto, Ont.
Asst. Engineer, Hydro-Electric Power Commission.
 1. J. G. R. ALISON, Pittsburgh, Pa.
With Riter-Conley Mfg. Co.
 3.*H. H. ANGUS, B.A.Sc., Toronto, Ont.
Chief Engineer, Canadian Domestic Engineering Co.
 3. J. A. BEATTY, Peterboro', Ont.
Morrow & Beatty, Contractors.
 3.*J. BRESLOVE, East Pittsburgh, Pa.
Steam Turbine Engineer, Westinghouse Machine Co.
 2. J. H. BURD, O., D., S. & A. L. S., C.E., Saskatoon, Sask.
Engineer and Surveyor.
 1.*E. L. BURGESS, D.L.S., Kamloops, B.C.
Burgess & Taggart, Surveyors and Engineers.
 2. N. A. BURWASH, B.A.Sc.,
On Overseas Service.
 1. F. F. CLARKE, D. & O.L.S., A.M. Can. Soc. C.E.,
On Overseas Service.
 2. C. L. COULSON, Welland, Ont.
 3.*A. E. DAVISON, B.A.Sc., C.E. Toronto, Ont.
Engineering Staff, Hydro-Electric Power Commission.
 3. C. J. FENSOM, B.A.Sc., M.E., Hamilton, Ont.
Works Engineer, Otis-Fensom Elevator Co
 2.*E. O. FUCE, O.L.S., Calgary, Alta.
Fuce & Scott, Consulting Civil Engineers.
 3.*F. A. GABY, B.A.Sc., Toronto, Ont.
Chief Engineer, Hydro-Electric Power Commission.
 1. J. C. GARDNER, B.A.Sc., Niagara Falls, Ont.
Consulting Engineer.
 3. R. E. GEORGE, Dover, N.H.
Electrical and Gas Engineer, The United Gas & Electric Co.
 1.*P. GILLESPIE, B.A.Sc., C.E. Toronto, Ont.
Associate Professor of Applied Mechanics, University of Toronto.
 1. W. A. GOURLAY, Toronto, Ont.
Engineering Staff, C. P. R.

*Diploma with honours.

1903—Continued.

2. J. F. HAMILTON, B.A.Sc., C.E., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.
2. G. S. HANES, B.A.Sc., O.L.S., North Vancouver, B.C.
Mayor.
2. F. Y. HARCOURT, B.A., Port Arthur, Ont.
Engineer, Public Works Dept.
1. L. J. HAYES, 2434 Niagara Ave., Niagara Falls, N.Y.
- 1.*F. D. HENDERSON, Secy. Board of Examiners for D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
- 5.*J. A. HORTON,
3. J. G. JACKSON, 98 Frontenac St., Kingston, Ont.
3. G. K. JOHNSTON, Pefferlaw, Ont.
Merchant.
1. H. JOHNSTON, O.L.S., Berlin, Ont.
City Engineer.
3. A. G. LANG, Toronto, Ont.
Underground Superintendent, Toronto Hydro-Electric System.
- 1.*A. J. LATORNELL, B.A.Sc.,
On Overseas Service.
- 1.*H. J. MCAUSLAN, B.A.Sc., O.L.S., North Bay, Ont.
Staff of T. & N. O. Ry.
3. J. A. MCFARLANE, B.A.Sc., Hamilton, Ont.
Chief Draftsman, Hamilton Bridge Works Co.
- 1.*A. L. MCNAUGHTON, Prince Rupert, B.C.
With G. T. P. Co.
- 5.*F. G. MARRIOTT, B.A.Sc., Toronto, Ont.
Chemist and Supt. Asphalt Plant, City Testing Laboratory.
- 3.*C. A. MAUS, Paris, Ont.
- 3.*M. L. MILLER, Pittsburgh, Pa.
Draftsman, McClintic-Marshall Construction Co.
3. P. H. MITCHELL, E.E., Toronto, Ont.
Consulting Electrical Engineer, Traders Bank Building.
- 2.*R. H. MONTGOMERY, B.A.Sc., O. and D.L.S., Prince Albert, Sask.
Engineer and Surveyor.
1. F. A. MOORE, Winnipeg, Man.
Engineering Dept. C. N. Ry.
3. E. E. MULLINS, Port Limon, Costa Rica
Supt. Motive Power, Northern Ry. Co.
3. I. H. NEVITT, B.A.Sc., Toronto, Ont.
Asst. Engineer, Main Drainage Dept., City Hall.
1. E. W. OLIVER, B.A.Sc., C.E., Toronto, Ont.
Assistant to Chief Engineer, Canadian Northern Ry. System.
3. J. P. OLIVER, Arabia, La.
Supt. of Construction, The American Sugar Refining Co.
3. J. D. PACE, B.A.Sc.,
3. B. B. PATTEN, B.A.Sc., St. Catharines, Ont.
Rutherford & Patten, Engineers and Surveyors.
2. D. H. PHILP, Ottawa, Ont.
Georgian Bay Canal Survey.
- 3.*D. H. PINKNEY, Elyria, O.
National Tube Dept., U. S. Steel Corporation.

*Diploma with honours.

1903—Continued.

2. T. H. PLUNKETT, B.A.Sc., Meaford, Ont.
Dominion Land Surveyor.
1. D. F. ROBERTSON, D.L.S., Ottawa, Ont.
Dept. of Indian Affairs.
- 3.*H. M. SCHEIBE, B.A.Sc., 10 Adelaide Rd., Somerville, Mass.
Supt., E. F. Delisle Co.
- 1.*H. L. SEYMOUR, B.A.Sc., Edmonton, Alta.
Sanders & Seymour, Civil Engineers and Dominion Land Surveyors.
1. J. H. SMITH, D. & O.L.S., 140 Jasper Ave. West, Edmonton, Alta.
Engineer and Surveyor.
3. H. G. SMITH, B.A.Sc. (deceased).
3. S. L. TREES, B.A.Sc., Whitby, Ont.
Manager, Samuel Trees & Co.
2. J. E. UMBACH, Victoria, B.C.
Chief Draftsman, Lands Dept., Department of the Interior.
1. J. WALDRON, D.L.S., Moose Jaw, Sask.
Engineer and Surveyor.
- 3.*S. B. WASS, Fredericton, N.B.
Supt. St. John & Quebec R.R.
3. J. A. WHELIHAN, Box 165, Regina, Sask.
3. H. F. WHITE, London, Ont.
Assistant Superintendent, The Geo. White & Sons, Co., Ltd.
- 2.*C. G. WILLIAMS, B.A.Sc., Porcupine, Ont.
Hollinger Mine.
- 1.*N. D. WILSON, B.A.Sc., Toronto, Ont.
Toronto Harbour Commission.
- 1.*C. R. YOUNG, B.A.Sc., C.E., Mem. Can. Soc. C.E., Toronto, Ont.
Asst. Professor in Structural Engineering, University of Toronto.

1904.

- 3.*J. H. ALEXANDER, B.A., C.E., A. M. Am. Soc. C.E., Winnipeg, Man.
Engineer and Contractor.
- 3.*J. H. BARRETT, Toronto, Ont.
With the Wm. Davies Co., Ltd.
3. M. B. BONNELL, Ottawa, Ont.
Dept. of Agriculture.
3. T. D. BROWN, B.A.Sc., Calgary, Alta.
Canadian Fairbanks Co.
1. R. J. BURLEY, Ottawa, Ont.
Dept. of the Interior.
3. F. W. BURNHAM, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. J. W. CALDER, B.A.Sc., Fort William, Ont.
With Hydro-Electric Commission.
1. N. C. CAMERON, 4172 Dorchester St., Montreal, Que.
Dominion Engineering and Construction Co.
1. A. J. CAMPBELL, B.A.Sc., Collingwood, Ont.
- 3.*A. M. CAMPBELL, B.A.Sc., M.E., Weston, Ont.
Erection Engineer, Toronto Structural Steel Co.
4. J. B. CHALLIES, C.E., Ottawa, Ont.
Supt., Water Power Branch, Department of the Interior.
2. C. A. CHILVER, Walkerton, Ont.

*Diploma with honours.

1904—Continued.

2. H. L. CHILVER, Windsor, Ont.
Assistant City Engineer.
1. U. W. CHRISTIE, B.A.Sc., O.L.S., Ottawa, Ont.
Astronomical Surveys Branch, Dept. of the Interior.
2. P. C. COATES, B.A.Sc., Victoria, B.C.
D. and B. C. Land Surveyor.
1. S. B. CODE, O.L.S., Smith's Falls, Ont.
Civil Engineer and Land Surveyor.
- 1.*T. F. CODE, B.A.Sc. (deceased).
- 1.*W. A. COWAN, Brownville Jct., Maine
Resident Engineer, C. P. R.
- 3.*S. E. CRAIG, B.A.Sc., Snelgrove, Ont.
- 1.*S. R. CRERAR, B.A.Sc., O.L.S., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. W. M. CURRIE, Hamilton, Ont.
General Manager, Burlington Steel Co., Ltd.
3. H. H. DEPEW, Fernie, B.C.
Supt. Crow's Nest Pass Electric Light and Power Co.
2. A. J. ELDER, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. J. G. FLECK, Vancouver, B.C.
Fleck Bros., Ltd.
- 1.*A. L. FORD, B.A.Sc., Prince Rupert, B.C.
Government Inspector, Dept. of Railways and Canals.
3. W. S. GIBSON, B.A.Sc., 38 Park Rd., Toronto, Ont.
1. J. N. GOODALL, Toronto, Ont.
Engineer, Niagara and Ontario Construction Co.
1. J. P. GORDON, Box 266, Dauphin, Man.
Engineering Staff, Willis Chipman, C.E.
3. W. W. GRAY, B.A.Sc., Edmonton, Alta.
Engineer, Edmonton Light and Power Co.
1. A. GRAY, B.A.Sc., Port Credit, Ont.
With St. Lawrence Starch Co.
3. W. K. GREENWOOD, B.A.Sc., Orillia, Ont.
Town Engineer.
1. L. D. HARA, St. Catharines, Ont.
Assistant Engineer, Welland Canal Co.
3. C. J. HARRIS, B.A.Sc., Brantford, Ont.
With Brantford Screw Co.
1. J. B. HERON, B.A.Sc.,
On Overseas Service.
1. E. M. M. HILL, Edmonton, Alta.
Engineering Dept. Canadian Northern Railway.
2. S. N. HILL, C.E., 325 Waverly St., Ottawa, Ont.
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2. C. J. INGLES,
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1. E. A. JAMES, B.A.Sc., C.E., Toronto, Ont.
Engineer, York County Highway Commission.
1. P. V. JERMYN, B.A.Sc., 118 King St. West, Toronto, Ont.
C. P. R. Construction Department.
3. W. S. H. KEEFE, Fort Covington, N.Y.
Manager, Light, Heat and Power Co.
3. W. J. LARKWORTHY (deceased).

*Diploma with honours.

1904—Continued.

3. O. B. McCUAIG, B.A.Sc.,
On Overseas Service.
1. G. G. McEWEN, B.A.Sc., Winchester, Ont.
Office of T. H. Dunn, O.L.S.
- 1.*W. G. McFARLANE, B.A., B.A.Sc., 55 Elliott St., Toronto, Ont.
Engineer and Surveyor, Peace River Dist.
- 3.*C. P. MCGIBBON, B.A., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. MCKAY, B.A.Sc. (deceased).
1. D. McMILLAN, Edmonton, Alta.
With C.N.R.
3. G. J. MANSON, M.E., Penetang, Ont.
Engineer, Grenville Board Co.
- 1.*W. N. MOORHOUSE, Toronto, Ont.
Office of Sproatt & Rolph, Architects.
3. E. E. MOORE, Glen Falls, N.Y.
Engineer, Inter-State Iron Co.
3. W. H. MUNRO, Peterboro, Ont.
With Peterborough Radial Ry.
3. G. PACE, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. W. S. PARDOE, B.A.Sc., Philadelphia, Pa.
Asst. Prof. in Civil Engineering, University of Pennsylvania.
3. J. PARIS, La Tuque, Que.
Resident Engineer, Transcontinental Ry.
1. J. PARKE, B.A.Sc., Havilah, Ont.
Chemist and Assayer.
3. W. J. PEAKER, Ottawa, Ont.
Topographical Surveys Branch, Dept. of the Interior.
- 3.*A. E. PICKERING, Sault Ste. Marie, Ont.
Manager, Tagona Light and Power Co.
1. D. L. C. RAYMOND, B.A.Sc., Toronto, Ont.
The Raymond Construction Co., Ltd.
1. F. B. REID, B.A.Sc., Ottawa, Ont.
Astronomical Surveys Branch, Dept. of the Interior.
- 3.*M. R. RIDDELL, B.A.Sc., 86 Spadina Rd., Toronto, Ont.
1. L. H. ROBINSON, Sioux Lookout, Ont.
T. and N.O. Ry.
3. G. S. ROXBURGH, B.A.Sc., Winnipeg, Man.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
2. F. N. RUTHERFORD, B.A.Sc.,
On Overseas Service.
3. P. M. SAUDER, Box 2318, Calgary, Alta.
- 1.*J. D. SHEPLY, B.A.Sc., D.L.S., N. Battleford, Sask.
District Surveyor and Engineer.
3. F. W. SLATER, B.A.Sc., Schenectady, N.Y.
With General Electric Co.
- 3.*R. S. SMART, M.E., Ottawa, Ont.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. D. A. SMITH, B.A.Sc., D. & S. L. S.,
On Overseas Service.
3. W. J. SMITHER, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.

*Diploma with honours.

1904—Continued.

3. S. E. THOMSON, B.A.Sc., Niagara Falls, Ont.
Engineering Staff, Electrical Development Co.
3. C. J. TOWNSEND, B.A.Sc., 79 Spadina Ave., Toronto, Ont.
Wilson, Townsend & Saunders.
1. D. T. TOWNSEND, B.A.Sc., O.L.S., Calgary, Alta.
Chief Surveyor, Dept. of Natural Resources, C.P.R.
1. A. V. TRIMBLE, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
3. B. B. TUCKER, B.A.Sc., Morrisburg, Ont.
Resident Engineer, New York and Ontario Power Co.
- 2.*E. WADE, B.A., Welland, Ont.
Builder.
- 1.*E. W. WALKER, B.A.Sc. (deceased).
3. J. P. WATSON, B.A.Sc., Montreal, Que.
With the St. Lawrence Bridge Co. Ltd.
1. J. M. WEIR, Toronto, Ont.
Sec.-Treasurer, The Toronto Plate Glass Importing Co., Ltd.
- 1.*A. F. WELLS, O.L.S., B.A.Sc., Toronto, Ont.
Wells & Gray, Ltd., Engineers and Contractors.
1. W. R. WORTHINGTON, B.A.Sc., Toronto, Ont.
Assistant Sewer Engineer, Staff of City Engineer.
3. W. F. WRIGHT, Toronto, Ont.
Ontario Manager, Eugene F. Phillips Electrical Works.

1905.

2. H. W. ARENS (deceased).
3. R. H. ARMOUR, 345 Jarvis Street, Toronto, Ont.
- 3.*C. B. AYLESWORTH, Hamilton, Ont.
Draftsman, Canadian Westinghouse Co.
- 1.*W. BARBER, B.A.Sc., Toronto, Ont.
Engineer, Waterworks Department, City Hall.
- 2.*W. A. BEGG, B.A.Sc., Regina, Sask.
Department of Public Works.
- 3.*G. G. BELL, Pittsburg, Pa.
West Pennsylvania Traction Co.
1. J. C. BOECKH, Toronto, Ont.
With Boeckh Brush Co.
3. W. M. BRISTOL, Halifax, N.S.
Canadian Westinghouse Co.
2. W. C. CAMPBELL, Keene, Ont.
Mining Engineer.
3. W. R. CARSON, Cleveland, O.
Engineering Dept., Grasselli Chemical Co.
1. A. V. CHASE, Ottawa, Ont.
Dept. of the Interior.
3. S. R. A. CLEMENT, Toronto, Ont.
With Hydro-Electric Power Commission.
3. T. E. CORRIGAN, Bodie, Cal.
Chief Electrician, Standard Consolidated Mining Co.
- 1.*N. L. R. CROSBY, B.A.Sc., Toronto, Ont.
Contracting Engineer, Toronto Structural Steel Co.
1. G. H. FERGUSON, B.A.Sc.,
On Overseas Service.
3. H. S. FIERHELLER, B.A.Sc. (deceased).

*Diploma with honours.

1905—Continued.

3. F. H. HARRISON, 320 Fifth Ave., New York, N.Y.
Engineer, H. D. Best Co.
1. M. C. HENDRY, B.A.Sc., Winnipeg, Man.
Manitoba Hydrographic Survey.
2. C. S. L. HERTZBERG, Toronto, Ont.
James, Loudon & Hertzberg.
- 3.*W. G. HEWSON, B.A.Sc., Niagara Falls, Ont.
 1. G. S. JONES, Smith's Falls, Ont.
 3.*G. KRIBS, Dallas, Texas.
Texas Power and Light Co.
2. P. A. LAING,
On Overseas Service.
1. A. LATORNELL, B.A.Sc., Toronto, Ont.
Sewer Department, City Hall.
3. J. W. LEIGHTON, Toronto, Ont.
President, Leighton-Jackes Mfg. Co.
- 1.*T. R. LOUDON, B.A.Sc.,
On Overseas Service.
3. S. E. MCGORMAN, Walkerville, Ont.
Asst. Engineer, Canadian Bridge Co.
- 1.*W. W. MCGREGOR (deceased).
2. D. W. MCKENZIE, Winnipeg, Man.
Draftsman, Engineering Dept. C.N. Ry.
- 3.*C. A. MCLEAN, Toronto, Ont.
Canadian Westinghouse Co.
2. W. N. MCLEAN, Erin, Ont.
 3. F. G. MACE, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.
3. R. W. MOFFATT, B.A.Sc., Winnipeg, Man.
University of Manitoba.
3. L. W. MORDEN, Toronto, Ont.
Canadian Westinghouse Co.
3. G. R. MUNRO, B.A.Sc., 405 Dorchester St. W., Montreal, Que.
Assistant to R. S. Lea.
- 3.*W. G. NICKLIN, B.A.Sc., Grand Rapids, Mich.
Assistant Superintendent, Dalnu & Kiefer Tanning Co.
1. E. D. O'BRIEN, St. Catharines, Ont.
Welland Ship Canal.
- 1.*B. B. PATTEN, B.A.Sc., St. Catharines, Ont.
Rutherford & Patten, Surveyors and Engineers.
1. E. P. A. PHILLIPS, B.A.Sc., O.L.S., Port Arthur, Ont.
City Engineer's Dept.
1. W. B. PORTE, Oakville, Ont.
 2. E. F. PULLEN,
On Overseas Service.
2. G. L. RAMSEY, B.A.Sc., Sault Ste. Marie, Ont.
Ontario Land Surveyor.
1. G. W. RAYNER, 410 Crown Life Bldg, Toronto, Ont.
 3.*R. B. ROSS (deceased).
5. T. E. ROTHWELL, B.A.Sc., Toronto, Ont.
Provincial Assay Office.
- 2.*G. S. SCOTT, 26 Howard St., Toronto, Ont.
 3. H. V. SERSON, Arnprior, Ont.
 3. C. H. SHIRRIFF, B.A.Sc., Toronto, Ont.
Chemist, Imperial Extract Co.

*Diploma with honours.

1905—Continued.

- 3.*C. E. SISSON, Peterboro', Ont.
Canadian Gen. Electric Co.
1. D. L. N. STEWART, B.A.Sc.,
On Overseas Service.
1. M. A. STEWART, Toronto, Ont.
Assistant Engineer, Roadway Dept., City Hall.
- 3.*W. F. STUBBS, Galt, Ont.
Assistant Engineer, Goldie & McCulloch Co.
1. N. H. STURDY, Youngstown, O.
Trussed Concrete Steel Co.
1. W. G. SWAN, B.A.Sc., C.E.,
On Overseas Service.
- 1.*F. H. SYKES, O.L.S., D.L.S., Toronto, Ont.
City Architect's Dept., City Hall.
3. L. R. THOMSON, B.A.Sc., Montreal, Que.
With Dominion Bridge Co.
3. E. D. TILLSON, B.A.Sc., Hotel Albert, New York, N.Y.
- 1.*J. J. TRAILL, B.A.Sc., Toronto, Ont.
Lecturer in Mechanical Engineering, University of Toronto.
- 1.*W. M. TREADGOLD, B.A., Toronto, Ont.
Asst. Professor in Surveying, University of Toronto.
3. W. E. TURNER, B.A.Sc., Salt Lake City, Utah
With Utah Light & Ry. Co.
3. A. E. UREN, Toronto, Ont.
Editor, Acton Publishing Co.
3. J. M. VAUGHAN, 58 Melville Ave., Toronto, Ont.
Contractor.
1. H. L. WAGNER, B.A.Sc., Toronto, Ont.
Chief Draftsman, Toronto Structural Steel Co., Ltd.
2. W. H. YOUNG, B.A.Sc., D.L.S., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.

1906.

1. F. ALPORT, B.A.Sc., D.L.S.
On Overseas Service.
- 3.*W. L. AMOS, Guelph, Ont.
Hydro-Electric Power Commission.
1. A. H. ARENS, Inverness, N.S.
Resident Engineer, Inverness Ry. & Coal Co.
- 3.*J. C. ARMER, B.A.Sc., Toronto, Ont.
Secretary-Treasurer Commercial Press, and Manager of the Canadian Manufacturer Publishing Co., Ltd.
1. M. H. BAKER, B.A.Sc., Toronto, Ont.
3. F. W. BALDWIN,
On Overseas Service.
2. E. W. BANTING, B.A.Sc., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. F. BARBER, 57 Adelaide St. East, Toronto, Ont.
York County Engineer.
2. M. BATES, B.A.Sc. (deceased).
2. J. P. BELLISLE (deceased).
- 3.*H. H. BETTS, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1906—Continued.

- 5.*D. E. BEYNON, B.A.Sc., Toronto, Ont.
General Supt., Dunlop Tire and Rubber Goods Co.
2. G. W. BISSETT, Naughton, Ont.
Mill Supt., Canadian Exploration Co., Ltd.
3. W. C. BLACKWOOD, B.A.Sc., Toronto, Ont.
Instructor, Technical High School.
3. H. E. BRANDON, B.A.Sc., Winnipeg, Man.
Chief Engineer, Vulcan Iron Works.
1. M. E. BRIAN, B.A.Sc., O.L.S., A.M. Can. Soc. C.E., Windsor, Ont.
City Engineer.
2. F. C. BROADFOOT, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
2. T. W. BROWN, B.A.Sc., D., S. & A.L.S., A.M. Can. Soc., C.E.,
Brown & Loucks, Civil Engineers. Saskatoon, Sask.
- 1.*A. E. K. BUNNELL, B.A.Sc., Toronto, Ont.
Engineer, Civic Transportation Committee.
3. F. M. BYAM, Toronto, Ont.
Chief Engineer, McGregor and McIntyre.
3. A. CAMERON, Winnipeg, Man.
Provincial Architect's Office.
3. A. W. CAMPBELL, B.A.Sc., Toronto, Ont.
Inspector, Hydro-Electric Power Commission.
1. M. J. CARROLL, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
- 3.*R. E. C. CHADWICK, Montreal, Que.
Manager, The Foundation Co., Ltd., of New York.
- 1.*G. T. CLARK, B.A., Saskatoon, Sask.
City Engineer.
- 3.*G. A. COLHOUN, Hamilton, Ont.
Draftsman, The Hamilton Bridge Works Co., Ltd.
- 1.*W. A. M. COOK, B.A.Sc., Toronto, Ont.
Staff of City Architect, City Hall.
- 1.*E. L. COUSINS, B.A.Sc., Toronto, Ont.
Engineer, Harbour Commission.
4. A. G. CREIGHTON, Prince Albert, Sask.
Creighton & Strothers, Architects and Structural Engineers.
4. W. N. DANIELS, 1215 Filbert St., Philadelphia, Pa.
With John. R. Wiggins & Co.
- 3.*N. P. F. DEATH, B.A.Sc., Toronto, Ont.
Death & Watson, Electrical Engineers and Contractors.
3. C. S. DUNDASS, B.A.Sc., Lachine, Que.
With Dominion Bridge Co.
3. S. L. FEAR, Amherstburg, Ont.
With Dunbar, Sullivan Dredging Co.
- 5.*C. C. FORWARD, Ottawa, Ont.
Laboratory of the Inland Revenue Department.
5. C. W. GRAHAM, B.A.Sc., Ottawa, Ont.
Asst. Chemist, Experimental Farm.
- 1.*P. W. GREENE,
On Overseas Service.
3. C. B. HAMILTON, B.A.Sc., Toronto, Ont.
Manager, Hamilton Gear and Machinery Co.

*Diploma with honours.

1906—Continued.

- 1.*A. L. HARKNESS, B.A.Sc., Montreal, Que.
St. Lawrence Bridge Co., Ltd.
- 1.*R. L. HARRISON, Cobourg, Ont.
Resident Engineer, Canadian Northern Ry.
1. E. HARRISON, B.A.Sc., Calgary, Alta.
Consulting Civil Engineer and Surveyor, 513 Beveridge Blk.
3. J. C. HARTNEY, B.A.Sc., Vancouver, B.C.
Engineer & Salesman, Canadian Westinghouse Co.
1. S. HETT, B.A.Sc., LePas, Man.
Locating Engineer of the Hudson Bay Ry.
3. C. R. HILLIS, Toronto, Ont.
With Toronto & Niagara Power Co.
3. C. W. HOOKWAY, B.A.Sc., Winnipeg, Man.
Allis-Chalmers-Bullock Co.
3. R. H. HOPKINS, B.A.Sc.,
On Overseas Service.
- 1.*R. S. HOUSTON, Winnipeg, Man.
With the Dominion Bridge Co.
- 2.*W. HUBER, Toronto, Ont.
With York County Highway Commission.
- 3.*A. H. HULL, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
3. W. C. JEPSON, Niagara Falls, Ont.
Welland Canal Office.
- 1.*C. JOHNSTON, B.A.Sc., Oakville, Ont.
Toronto-Hamilton Highway Commission.
1. G. R. JONES, B.A.Sc., China
Missionary.
3. T. JONES, B.A.Sc.,
On Overseas Service.
- 1.*A. E. JUPP, B.A.Sc., 165 Bolton Ave., Toronto, Ont.
3. J. D. KEPPY, 50 Pearl St., Toronto, Ont.
Mechanical Engineer.
1. J. L. LANG, B.A.Sc., D. & O.L.S., Sault Ste. Marie, Ont.
Lang & Keys, Engineers and Surveyors.
3. A. P. LINTON, B.A.Sc.,
On Overseas Service.
- 4.*A. WELLESLEY McCONNELL, B.A.Sc.,
On Overseas Service.
- 3.*D. G. McILWRAITH, Galt, Ont.
Draftsman, The Goldie & McCulloch Co., Ltd.
2. J. A. MCKENZIE, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
- 1.*J. V. McNAB, Moose Jaw, Sask.
Resident Engineer, C.P.R.
3. J. A. McPHERSON, Toronto, Ont.
2. K. A. MACKENZIE, B.A.Sc., Toronto, Ont.
Malvern High School.
1. W. C. MACKINNON, Lachine, P.Q.
Dominion Bridge Co.
- 3.*W. MACLACHLAN, B.A.Sc., Toronto, Ont.
Electric Power Co.
- 3.*D. W. MARRS, 534 Centennial Ave., Sewickley, Pa.

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1906—Continued.

3. W. A. MAXWELL, Winnipeg, Man.
Dominion Bridge Co.
- 1.*REV. J. MELLON MENZIES, B.A.Sc., D.L.S., Wu An Hsien, North
Missionary. Honan, China
3. L. R. MILLER, B.A.Sc., Watrous, Sask.
Supt., Electric Light, Power and Traction Co.
- 1.*B. F. MITCHELL, B.A.Sc., Edmonton, Alta.
Municipal Engineer.
1. F. F. MONTAGUE, 506 Union Bank Bldg., Winnipeg, Man.
- 1.*W. J. MOORE, O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.
1. C. R. MURDOCK, B.A.Sc., Winnipeg, Man.
Resident Engineer, Chipman and Power.
2. C. J. MURPHY, B.A.Sc., Nova Scotia Bank Bldg., St. Catharines,
Consulting Engineer. Ont.
- 1.*W. P. NEAR, B.A., B.A.Sc., St. Catharines, Ont.
City Engineer.
2. R. NEELANDS, Port Hammond, B.C.
3. D. G. PARK, B.A.Sc., 92 Arlington St., Winnipeg, Man.
Engineer, Waldron Co., Ltd., Heating Engineers.
3. G. W. PATERSON, Vancouver, B.C.
Salesman, Canadian Financiers, Ltd.
5. R. E. PETTINGILL, Port Colborne, Ont.
Chief Chemist, Canada Cement Co.
- 2.*R. C. PURSER, B.A.Sc., Windsor, Ont.
3. N. R. ROBERTSON, B.A.Sc.,
On Overseas Service.
1. J. O. RODDICK, B.A.Sc., Toronto, Ont.
Assistant Engineer, Dept. of Public Works of Canada.
1. C. H. ROGERS, B.A.Sc.,
On Overseas Service.
- 2.*O. ROLFSON, M.A.Sc., D.L.S., O.L.S.,
On Overseas Service.
1. R. C. ROSS, B.A.Sc., Ottawa, Ont.
Department of the Interior.
1. K. G. ROSS, Sault Ste. Marie, Ont.
Lang & Ross, Engineers and Surveyors.
- 1.*H. T. ROUTLY, O.L.S., D.L.S., Haileybury, Ont.
Routly & Summers, Engineers and Surveyors.
2. J. H. RYCKMAN, Toronto, Ont.
Railway and Bridge Dept., City Hall.
- 3.*W. K. SANDERS, 58 Webster St., West Newton, Mass.
- 1.*W. A. SCOTT, B.A.Sc., D.L.S., Galt, Ont.
Dominion Land Surveyor.
- 1.*W. M. STEWART, B.A.Sc., Saskatoon, Sask.
Phillips, Stewart & Lee.
2. J. E. THOMSON, B.A.Sc., W. Virginia, U.S.A.
With Sterling Coal Co.
- 3.*C. L. VICKERY, 85 Barlow St., Fall River, Mass.
Chief Engineer, American Thread Co.
5. W. E. WICKETT (deceased).
- 3.*J. N. Wilson, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Comm.
- 3.*E. M. WOOD, B.A.Sc., 136 Lee Ave., Toronto, Ont.
Engineering Dept., Canadian General Electric Co., Ltd.

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1907.

- 3.*F. G. ALLEN, B.A.Sc., 642 West 10th Street, Erie, Pa.
 1. F. J. ANDERSON, B.A.Sc.,
On Overseas Service.
 1. A. P. AUGUSTINE, Vancouver, B.C.
B.C. Land Surveyor.
 3.*H. D. BOWMAN, B.A.Sc., 509 Ontario St., London, Ont.
 3. W. S. BRADY, B.A.Sc., 579 Euclid Ave., Toronto, Ont.
 1. G. H. BROUGHTON, Penticton, B.C.
Manager, People's Trust Co.
 1. J. A. BROWN, B.A.Sc., Porcupine, Ont.
With Routly & Summers.
 1. C. E. BUSH, B.A.Sc.,
On Overseas Service.
 3. J. H. CASTER, Toronto, Ont.
Toronto Hydro-Electric System.
 1.*E. CAVELL, Toronto, Ont.
 1.*C. B. B. CONNELL, Glasgow, Scotland
With Mirrless & Watson.
 3.*G. C. COWPER, B.A.Sc., Welland, Ont.
Topographical Surveys in Sask.
 2. J. V. CULBERT, B.A.Sc., Cobalt, Ont.
Buffalo Mines.
 3.*R. S. DAVIS, B.A.Sc., Calgary, Alta.
Sales Engineer, Canadian Westinghouse Co.
 3. S. D. EVANS, B.A.Sc., Leamington, Ont.
 3.*F. R. EWART, B.A.Sc., Toronto, Ont.
Ewart & Jacob.
 1. G. R. S. FLEMING,
On Overseas Service.
 6. P. C. FUX, B.A.Sc., Brantford, Ont.
With Waterous Engine Works Co.
 1. J. S. GALLETTY, B.A.Sc., Brooklin, Ont.
 2. G. GALT, B.A.Sc., Rancagua, Chili
Braden Copper Co.
 1. A. B. GARROW, B.A.Sc.,
On Overseas Service.
 1. A. GILLIES, B.A.Sc.,
On Overseas Service.
 1. G. W. GRAHAM, Eugenia, Ont.
 3. C. S. GRASETT, B.A.Sc., 8 Harbord St., Toronto, Ont.
 1.*R. E. W. HAGARTY, B.A.Sc., Calgary, Alta.
Trussed Concrete Steel Co.
 3. K. HALL, B.A.Sc., Edmonton, Alta.
Asst. Engineer, C.P.R.
 1. C. T. HAMILTON, B.A.Sc., 142 Hastings St. W., Vancouver, B.C.
Johnston and Hamilton.
 3. R. A. HARE, St. Catharines, Ont.
With Canadian Crocker Wheeler Co.
 1. H. F. H. HERTZBERG,
On Overseas Service.
 3.*H. O. HILL, B.A.Sc., 315 Western Ave., Aspinwall, Pa.
 1.*T. H. HOGG, B.A.Sc., C.E., Toronto, Ont.
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1907—Continued.

- 3.*C. H. HUTTON, B.A.Sc., Hamilton, Ont.
Engineering Staff, Dominion Power Co.
1. H. M. HYLAND, B.A.Sc., 75 St. Mary St., Toronto, Ont.
3. E. W. HYMAN, B.A.Sc., London, Ont.
Assistant Superintendent, London Electric Co.
- 3.*L. G. IRELAND, B.A.Sc., Brantford, Ont.
Supt. Hydro-Electric System.
- 1.*W. JACKSON, B.A.Sc., Niagara Falls, Ont.
Field Engineer, Ontario Power Co.
- 4.*C. B. JACKSON, Kenilworth, Ill.
Estimating Department, C. Everett Clark Co.
- 3.*E. W. KAY, B.A.Sc., Winnipeg, Man.
Asst. Manager, Reinforced Brickwork Co., Ltd.
3. D. F. KEITH, B.A.Sc.,
On Overseas Service.
1. H. P. KEITH, Edmonton, Alta.
Smith & Keith, Alta. Land Surveyors and Engineers.
1. A. A. KINGHORN, B.A.Sc., Toronto, Ont.
Manager, Asphaltic Concrete Co. of Toronto, Ltd.
1. L. W. KLINGER,
On Overseas Service.
- 1.*F. C. LAMB, B.A.Sc., North Battleford, Sask.
Department of Public Works.
3. A. D. LEPAN, B.A.Sc.,
On Overseas Service.
1. J. H. LINDSAY, S. & D. L. S., Prince Albert, Sask.
Dist. Surveyor and Engineer, Public Works Dept.
3. J. A. D. McCURDY, Toronto, Ont.
Curtiss Aeroplane Co.
3. J. A. D. McCURDY, Hammondsport, N.Y.
With Graham Bell, Esq.
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Dominion Land Surveyor.
- 3.*D. J. MCGUGAN, B.A.Sc., New Westminster, B.C.
Burnett & McGugan.
3. A. H. MCINTOSH, Chicago, Ill.
With Illinois Steel Co.
3. F. W. MCNEILL, B.A.Sc., Peterboro', Ont.
Canadian General Electric Co.
- 1.*M. K. MCQUARRIE, Revelstoke, B.C.
Resident Engineer, C.P. Ry. Co.
- 1.*G. MACLEOD, Montreal, P.Q.
1. A. G. MACKAY, New York, N.Y.
With Hudson & Manhattan Ry. Co.
1. W. S. MALCOLMSON, B.A.Sc., 163 Havelock Street, Toronto, Ont.
Engineer and Surveyor.
3. S. A. MARSHALL, Welland, Ont.
6. D. H. C. MASON, B.A.Sc.,
On Overseas Service.
1. J. W. MELSON, B.A.Sc.,
1. G. G. MILLS, B.A.Sc.,
On Overseas Service.
3. J. B. MINNS, B.A.Sc., Winnipeg, Man.
Sales Engineer, Canadian General Electric Co.

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1907—Continued

- 4.*G. N. MOLESWORTH,
On Overseas Service.
1. J. M. MOORE, B.A.Sc., London, Ont.
With McClary Mfg. Co.
- 5.*P. F. MORLEY, Toronto, Ont.
Meteorological Office.
1. E. W. MURRAY, B.A.Sc., Regina, Sask.
Dept. of Public Works.
3. J. D. MURRAY, Toronto, Ont.
With Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. E. W. NEELANDS, B.A.Sc., New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. R. E. K. NEELANDS, B.A.Sc.,
On Overseas Service.
- 2.*B. NEILLY, B.A.Sc., M.E., Cobalt, Ont.
Manager, Penn-Canadian Mines.
1. A. E. NOURSE, B.A.Sc., Toronto, Ont.
3. J. J. O'SULLIVAN, Toronto, Ont.
With Canada Railway News Co.
2. T. K. PATON, Wardner, Ida.
Mining Engineer.
1. F. W. PAULIN, O.L.S., Bank of Hamilton Bldg., Hamilton, Ont.
Contractor.
1. R. B. POTTER, B.A.Sc., Toronto, Ont.
Asst. Engineer, Roadways Dept., City Hall.
- 3.*F. E. PROCHNOW, B.A.Sc., Buffalo, N.Y.
With Wilhelm, Parker & Ward, Patent Attorneys.
- 3.*J. F. PROCUNIER, Straffordville, Ont.
3. G. E. QUANCE, B.A.Sc., Delhi, Ont.
Secy.-Treas. of the Delhi Light & Power Co., Ltd.
- 3.*H. RAINE, Toronto, Ont.
With Prack & Perrine, Architects and Engineers.
- 1.*J. L. RANNIE, B.A.Sc., Ottawa, Ont.
Observer, Geodetic Survey.
3. C. W. B. RICHARDSON, B.A.Sc., Montreal, Que.
Dominion Bridge Co.
1. A. A. RIDLER, Toronto, Ont.
Supt. Constructing & Paving Co., Ltd.
5. H. E. ROTHWELL, Toronto, Ont.
Post-graduate Course in Engineering, University of Toronto.
5. C. A. SCHOFIELD, Buffalo, N.Y.
Chemist, Schoell-Kopf-Hartford & Hanna Co.
- 1.*A. C. T. SHEPPARD, *On Overseas Service.*
1. F. R. SMITH, B.A., Gowganda, Ont.
Manager, Can. Gowganda Silver Mines.
3. E. R. SMITHRIM, B.A.Sc., Watrous, Sask.
Supt., Watrous Electric Light, Power and Traction Co., Ltd.
- 1.*W. SNAITH, Toronto, Ont.
Secy.-Treas., The Thor Iron Works, Ltd.
3. A. C. SPENCER, B.A.Sc., *On Overseas Service.*
3. G. S. STEWART, Montreal, Que.
Sales Engineer, Canadian General Electric Co.

*Diploma with honours.

1907—Continued.

1. J. A. STILES, B.A.Sc., Fredericton, N.B.
Professor of Civil Engineering, University of N. B.
- 3.*J. L. STIVER, Ottawa, Ont.
Electrical Standard Laboratory, Inland Revenue Department.
1. J. L. G. STUART, B.A.Sc., Oakville, Ont.
Resident Engineer, Toronto-Hamilton Highway.
1. G. F. SUMMERS, O.L.S., Haileybury, Ont.
Routly & Summers, Engineers and Surveyors.
- 1.*H. W. SUTCLIFFE, New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. P. M. THOMPSON, B.A.Sc., Ambridge, Pa.
Draftsman, American Bridge Co.
3. O. R. THOMSON, B.A.Sc., Trenton, Ont.
The Electric Power Co.
1. L. R. THOMSON, B.A.Sc., Montreal, Que.
With Dominion Bridge Co.
1. W. J. WALKER, Grant, Ont.
With Transcontinental Ry.
1. E. D. WILKES, B.A.Sc., Toronto, Ont.
Main Drainage Department, City Hall.
3. A. F. WILSON, B.A.Sc., Chicago, Ill.
Inspector, Chicago Telephone Co.
3. M. H. WOODS, B.A.Sc., Aylmer West, Ont.
1. G. W. A. WRIGHT, 517 Oxford St., London, Ont.
Warren Bituminous Paving Co.
3. J. YOUNG, Box 2973, Winnipeg, Man.
- 3.*A. R. ZIMMER, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.

1908.

3. H. G. AKERS, B.A.Sc., 448-449 Confederation Life Bldg., Toronto, Ont.
Akers, Mason & Bonnington, Chemical Engineers.
3. L. F. ALLAN, Toronto, Ont.
Roadway Dept., City Hall.
- 1.*C. B. ALLISON, O.L.S., South Woodslee, Ont.
- 1.*R. M. ANDERSON, B.A.Sc.,
On Overseas Service.
5. R. J. ARENS, B.A.Sc., Akron, O.
Chemist, Firestone Tire & Rubber Co.
3. H. C. BARBER, B.A.Sc., Hamilton, Ont.
Standard Underground and Cable Co.
1. E. BARTLETT, B.A.Sc., Medicine Hat, Alta.
Surveyor and Civil Engineer.
2. F. J. BEDFORD (deceased).
- 1.*G. G. BELL, Portland, Me.
With Sawyer & Moulton, Consulting Engineers.
3. G. E. BLACK, B.A.Sc., Guelph, Ont.
Roadway Engineer, Provincial Prison Farm.
3. H. F. BOWES, Toronto, Ont.
Superintendent of Warren Bituminous Paving Co., Ltd.
- 3.*J. H. BRACE, Montreal, P.Q.
Traffic Engineer, Bell Telephone Co.
1. P. R. BRECKEN, B.A.Sc., Calgary, Alta.
General Secretary, Y.M.C.A.

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1908—Continued.

3. E. I. BROWN, Toronto, Ont.
Sales Dept., Northern Electric and Manufacturing Co.
1. W. F. M. BRYCE, Ottawa, Ont.
Assistant Engineer, City Engineer's Department.
3. P. H. BUCHAN, B.A.Sc., Vancouver, B.C.
Engineering Department, B.C. Electric Ry. Co., Ltd.
2. J. E. CAMPBELL, B.A.Sc., Coldstream, Ont.
3. N. A. CAMPBELL, Calgary, Alta.
Chief Chemist, Canada Cement Co.
3. A. M. CARROLL, Cobalt, Ont.
Manager, Rochester Cobalt Mines, Ltd.
1. H. R. CARSCALLEN, B.A.Sc., Calgary, Alta.
Irrigation Branch, Dept. of the Interior.
3. G. CHALLEN, Chedoke P.O., Hamilton, Ont.
1. F. H. CHESNUT, B.A.Sc., Port Mann, B.C.
Resident Engineer, C.N.R. Plant.
1. W. E. COLE (deceased).
- 4.*W. C. COLLETT, B.A.Sc., Toronto, Ont.
Manager, Collett Carriage Works.
1. R. Y. CORY, B.A.Sc.,
On Overseas Service.
- 3.*H. COYNE, B.A.Sc., Washington Blvd., Chicago, Ill.
Designing Draftsman.
- 2.*J. D. CUMMING, B.A.Sc., Copper Cliff, Ont.
Asst. Mech. Supt., with Canadian Copper Co.
6. A. D. DAHL, B.A.Sc., Midland, Mich.
Chemist, Dow Chemical Co.
1. F. A. DANKS, 544 Gladstone Ave., Toronto, Ont.
3. J. DARROCH, Detroit, Mich.
Draftsman, Autoparts Mfg. Co.
3. H. C. DOORLY (deceased).
2. R. H. DOUGLAS, Edmonton, Alta.
Department of Public Works.
- 2.*F. C. DYER, B.A.Sc., Toronto, Ont.
Lecturer in Mining Engineering, University of Toronto.
1. F. M. EAGLESON, Winchester, Ont.
Engineer and Surveyor.
1. C. EDWARDS, B.A.Sc.,
On Overseas Service.
1. S. L. EVANS, B.A.Sc., Corinth, Ont.
Dominion Land Surveyor.
1. E. O. EWING, Toronto, Ont.
1. O. L. FLANAGAN, B.A.Sc., 1003 Traders Bank Bldg., Toronto, Ont.
With C. H. Mitchell, Consulting Engineer.
1. C. FLINT, B.A.Sc.,
On Overseas Service.
1. A. H. FOSTER, B.A.Sc., Guelph, Ont.
With Guelph St. Ry.
3. G. C. FRANCIS, Verschoyle, Ont.
3. S. S. GEAR, Fort Erie, Ont.
1. C. A. GRASSIE, B.A.Sc., Welland, Ont.
- 3.*C. L. GULLEY, B.A.Sc., Toronto, Ont.
Northern Electric and Manufacturing Co.

*Diploma with honours.

1908—Continued.

3. J. W. HACKNER, B.A.Sc., Sandford, Ont.
Inspector of Public Works.
3. F. L. HAVILAND, Hamilton, Ont.
Draftsman, Hamilton Bridge Works Co.
- 1.*C. D. HENDERSON, Walkerville, Ont.
Canadian Bridge Co.
1. E. G. HEWSON, Toronto, Ont.
Division Engineer, Grand Trunk Ry.
- 5.*D. J. HUETHER, B.A.Sc., Toronto, Ont.
With Dunlop Tire and Rubber Co.
1. A. D. HUETHER, B.A.Sc., 77 Grenville St., Toronto, Ont.
- 3.*A. N. HUNTER, B.A.Sc., Detroit, Mich.
Canadian Inspection Co.
3. S. B. ILER, Commercial Chambers, Brantford, Ont.
Asst. Engineer, Hydro-Electric System.
- 1.*J. T. JOHNSTON, B.A.Sc., Ottawa, Ont.
Hydraulic Engineer, Water Power Branch, Dept. of the Interior.
2. H. G. KENNEDY, B.A.Sc., Cobalt, Ont.
Cobalt Lake Mine.
- 1.*W. R. KEYS, North Bay, Ont.
T. & N. O. Ry.
- 3.*J. N. M. LESLIE, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. F. C. LEWIS, Toronto, Ont.
Jackson-Lewis Co.
3. H. R. LYNAR, St. Catharines, Ont.
Welland Ship Canal Office.
- 1.*W. G. McGEORGE, Chatham, Ont.
Consulting Engineer.
1. J. M. MCGREGOR, Chatham, Ont.
McCubbin & McGregor.
1. L. A. McLEAN, B.A.Sc. (deceased).
1. W. A. A. McMASTER, A.S. & D.L.S., Prince Albert, Sask.
1. H. C. McMORDIE, B.A.Sc.,
On Overseas Service.
- 1.*A. A. McROBERTS, B.A.Sc., North Bay, Ont.
T. & N. O. Ry.
- 5.*N. G. MADGE, New York, N.Y.
Chief Chemist, Continental Rubber Co. of N. Y.
3. J. E. MALONE, B.A.Sc., Chicago, Ill.
With Illinois Steel Co.
5. K. D. MARLATT,
On Overseas Service.
1. R. J. MARSHALL, B.A.Sc., Toronto, Ont.
Demonstrator in Applied Mechanics, University of Toronto.
5. G. L. MILLIGAN, B.A.Sc., Brampton, Ont.
1. A. B. MITCHELL, Montreal, Que.
With N. MacLeod, Contractors.
- 4.*J. C. P. MOLESWORTH (deceased).
3. E. D. MONK, B.A.Sc., Cincinnati, Ohio
General Electric Co.
- 3.*F. H. MOODY, B.A.Sc.,
On Overseas Service.
3. J. H. MORICE, B.A.Sc., 24 Swan St., Schenactady, N.Y.
General Electric Co.

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1908—Continued.

3. F. E. H. MOWBRAY, B.A.Sc.,
Canadian Westinghouse Co. Hamilton, Ont.
- 3.*W. P. MURRAY, B.A.Sc.,
On Overseas Service.
3. W. deC. O'GRADY,
Engineer, Gas Traction Co., Ltd. Winnipeg, Man.
1. H. J. PECKOVER, B.A.Sc.,
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- 1.*M. PEQUEGNAT, B.A.Sc.,
Berlin, Ont.
1. H. G. PHILLIPS, D.L.S., S.L.S.,
Smith & Phillips, Civil Engineers. Regina, Sask.
3. M. PIVNICK, B.A.Sc.,
Dentist. Toronto, Ont.
- 1.*E. M. PROCTOR, B.A.Sc.,
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- 3.*C. F. PUBLOW, B.A.Sc.,
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1. J. T. RANSOM, B.A.Sc.,
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- 1.*W. B. REDFERN, B.A.Sc.,
On Overseas Service.
1. F. L. RICHARDSON, B.A.Sc.,
With Miller, Cummings & Robertson. Toronto, Ont.
3. H. A. RICKER, B.A.Sc.,
Canadian Westinghouse Co. Hamilton, Ont.
1. A. R. ROBERTSON, B.A.Sc.,
On Overseas Service.
5. F. A. ROBERTSON,
With Canada Cement Co. Toronto, Ont.
- 1.*W. A. ROBINSON,
Right-of-Way Surveyor, C.P.R. Winnipeg, Man.
3. R. C. ROBINSON,
With C. N. Ry. Winnipeg, Man.
5. L. J. ROGERS, B.A.Sc.,
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- 2.*R. R. ROSE, B.A.Sc.,
On Overseas Service.
3. D. ROSS, B.A.Sc.,
Smith, Kerry & Chace. Toronto, Ont.
1. A. O. SECORD,
Brantford, Ont.
3. W. E. V. SHAW, B.A.Sc.,
On Overseas Service.
3. H. F. SHEARER, B.A.Sc.,
Toronto Hydro-Electric System. Toronto, Ont.
1. W. L. STAMFORD, B.A.Sc.,
Inspector on Concrete Work, Hydro-Electric Power Plant. Point du Bois, Man.
3. R. H. STARR, B.A.Sc.,
Toronto Hydro-Electric System. Toronto, Ont.
3. A. W. J. STEWART,
Toronto Hydro-Electric System. Toronto, Ont.
3. J. ST. LAWRENCE,
Supt. of Engine Shops, Erie City Iron Works. Erie, Pa.
1. J. J. STOCK, D.L.S.,
On Overseas Service.

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1908—Continued.

1. H. B. STUART, B.A.Sc.,
On Overseas Service.
2. J. L. G. STUART, B.A.Sc.,
Railway & Special Works Department, City Hall. Toronto, Ont.
3. A. D. SWORD, B.A.Sc.,
Shell Inspector. Toronto, Ont.
3. J. W. R. TAYLOR, B.A.Sc.,
Erecting Engineer for Canadian Westinghouse Co. Campbellford, Ont.
- 1.*W. E. TAYLOR, B.A.Sc.,
34 McRae St., Toronto, Ont.
Niagara Falls, Ont.
3. V. C. THOMAS, B.A.Sc.,
On Overseas Service.
1. J. H. THORNLEY, B.A.Sc.,
On Overseas Service.
1. C. G. TOMS, B.A.Sc.,
General Manager, Toms Contracting Co., Ltd. 56 Spencer Ave., Toronto, Ont.
1. H. W. TYE,
Construction Dept., C.P.R. Winnipeg, Man.
3. C. P. VAN NORMAN, B.A.Sc.,
On Overseas Service.
1. T. L. VILLENEUVE,
Assistant Engineer, Dept. of Public Works. Chicoutimi, Que.
1. J. A. WALKER, B.A.Sc.,
Assistant to Surveyor-General. Vancouver, B.C.
- 3.*B. W. WAUGH, B.A.Sc.,
Dept. of the Interior. Ottawa, Ont.
3. R. M. WEDLAKE, B.A.Sc.,
With Cockshutt Plow Co., Ltd. Brantford, Ont.
3. R. P. WEIR,
Canadian Manager, Cutter Elec. and Mfg. Co. Toronto, Ont.
1. A. M. WEST, B.A.Sc.,
C.N.R. Office. Vancouver, B.C.
1. W. R. WHITE,
Supt. on Construction, General Electric Co. Drayton, Ont.
3. W. J. WHITE, B.A.Sc.,
Supt. on Construction, General Electric Co. Boston, Mass.
- 3.*F. D. WILSON, B.A.Sc.,
District Engineer, Dept. of Public Works of Canada. Detroit, Mich.
1. J. M. WILSON,
District Engineer, Dept. of Public Works of Canada. Toronto, Ont.
1. D. O. WING,
City Engineer's Office. Vancouver, B.C.
- 3.*R. YOUNG,
Lake Bunstzen, Burrard Inlet, B.C.

1909.

3. E. G. ARENS,
Canadian Westinghouse Co. Hamilton, Ont.
3. H. V. ARMSTRONG,
Town Engineer. Estevan, Sask.
- 2.*E. T. AUSTIN, B.A.Sc.,
With the Mond Nickel Co. Coniston, Ont.
3. W. H. BARRY, B.A.Sc.,
Anderson and Barry, Engineers and Surveyors. Niagara Falls, Ont.
3. R. D. S. BECKSTEDT, B.A.Sc.,
Abitibi Power and Paper Co. Iroquois Falls, Ont.
3. R. E. BEITH,
Dept. of Public Works. Toronto, Ont.
- 1.*G. A. BENNETT, B.A.Sc., C.E.,
Dominion Land Surveyor, Dept. of the Interior. Tillsonburg, Ont.

*Diploma with honours.

1909—Continued.

3. E. R. BIRCHARD, B.A.Sc.,
On Overseas Service.
3. W. D. BLACK, B.A.Sc.,
Supt., Otis-Fensom Elevator Co., Ltd. Montreal, Que.
- 3.*D. C. BLIZARD, B.A.Sc.,
Supt. Mechanical Construction, Toronto Power Co. Toronto, Ont.
- 1.*W. J. BOULTON, B.A.Sc.,
Wallaceburg, Ont.
3. G. H. BOWEN, B.A.Sc.,
Engineer on Construction, H. A. Campaigne & Co. Niagara Falls, Ont.
3. C. E. BROWN, B.A.Sc.,
Canadian Westinghouse Co. Hamilton, Ont.
1. E. W. BROWNE, B.A.Sc.,
247 Cannon St. E., Hamilton, Ont.
1. J. A. BUCHANAN,
140 Jasper West, Edmonton, Alta.
3. J. E. BURNS, B.A.Sc.,
231 Seaton St., Toronto, Ont.
1. M. G. CAMERON, B.A.Sc.,
Peterboro', Ont.
- 3.*R. A. CAMPBELL,
Supt., Tagona Water & Light Co. Sault Ste. Marie, Ont.
1. V. S. CHESNUT, B.A.Sc.,
Asst. Engineer, Welland Ship Canal. St. Catharines, Ont.
- 1.*C. G. CLINE, B.A.Sc.,
Assistant Engineer, Dept. of the Interior. Kamloops, B.C.
1. J. G. COLLINSON, B.A.Sc.,
Carborundum Co. Niagara Falls, N.Y.
1. G. W. COLTHAM, B.A.Sc.,
Aurora, Ont.
- 3.*H. A. COOCH, B.A.Sc.,
On Overseas Service.
3. W. E. CORMAN,
Chief Draftsman, with C. H. & P. H. Mitchell. Toronto, Ont.
3. T. H. CROSBY, B.A.Sc.,
Sales Engineer, Canadian Westinghouse Co. Vancouver, B.C.
3. R. H. CUNNINGHAM,
193 Dougall Ave., Windsor, Ont.
- Hoskins Electrical Manufacturing Co.*
- 1.*F. A. DALLYN, B.A.Sc., C.E.,
Engineer, City Testing Laboratory, Board of Public Health. Toronto, Ont.
3. C. N. DANKS,
Asst. Engineer, Jenckes Machine Co. Sherbrooke, Que.
1. E. M. DANN,
Asst. Engineer, Hydrographic Survey. Kamloops, B.C.
3. H. W. DAVIS,
With A. Davis & Son, Ltd., Leather Manufacturers. Kingston, Ont.
- 2.*A. I. DAVIS, B.A.Sc.,
Canada Foundry Co. Toronto, Ont.
1. H. C. DAVIS,
With Dr. Leslie Coleman. Bangalore, India
1. I. H. DAWSON,
With T.C. Ry. Cochrane, Ont.
3. W. H. DELAHAYE, B.A.Sc.,
Pembroke, Ont.
3. W. P. DERHAM, B.A.Sc.,
Ottawa, Ont.
- 5.*W. A. DODDS, B.A.Sc.,
With Penman-Littlehales Chemical Co. Syracuse, N.Y.
1. R. H. DOUGLAS,
Department of Public Works. Edmonton, Alta.
1. M. O. DUFF,
2. L. J. DUTHIE,
Assayer and Surveyor, Porcupine Crown Mine. Timmins, Ont.

*Diploma with honours.

1909—Continued.

1. F. S. FALCONER, B.A.Sc., 127 Slater St., Ottawa, Ont.
3. T. A. FARGEY, B.A.Sc., Detroit, Mich.
With Scott Bros. Electric Co.
1. J. B. FERGUSON, B.A.Sc., Winnipeg, Man.
Eng. Dept. C.N.R.
3. A. T. FERGUSSON, B.A.Sc., 70 Madison Ave., Toronto, Ont.
3. T. E. FREEMAN, B.A.Sc., Peterboro', Ont.
Canadian General Electric Co.
3. E. R. FROST, B.A.Sc., 159 Wentworth St. N., Hamilton, Ont.
1. A. E. GLOVER, B.A.Sc., Edmonton, Alta.
5. A. E. GOODERHAM, Toronto, Ont.
With Gooderham & Worts.
1. D. A. GRAHAM, B.A.Sc., Chilliwack, B.C.
Track Engineer, C.N.P.R.
2. R. R. GRANT, 106 Warren Rd., Toronto, Ont.
Contractor.
1. J. E. GRAY, B.A.Sc., Edmonton, Alta.
With T.C. Ry.
1. G. E. D. GREENE, B.A.Sc.,
On Overseas Service.
1. W. H. GREENE, Moose Jaw, Sask.
Assistant City Engineer.
1. W. W. GUNN, B.A.Sc., 243 Quebec Ave., Toronto, Ont.
3. F. G. HAGERMAN, Cobourg, Ont.
3. C. J. HARPER, Collingwood, Ont.
Engineer and Surveyor.
1. D. W. HARVEY, B.A.Sc., Toronto, Ont.
Canada Foundry Co.
1. C. O. HAY (deceased).
- 3.*J. HEMPHILL, Magpie Mine, Ont.
Construction Engineer, Algoma Steel Corp., Mines Dept.
- 1.*G. HOGARTH, Toronto, Ont.
Chief Engineer of Highways, Dept. of Public Works of Ontario.
3. A. E. HOLMES, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. R. HOLMES, B.A.Sc., Detroit, Mich.
With Electric Storage Battery Co.
1. G. C. HOSHAL, B.A.Sc., Windsor, Ont.
Hydro-Electric Power Commission.
3. C. HUGHES, B.A.Sc. (killed in action, France, 1915).
1. A. E. HUNTER, B.A.Sc. (deceased).
3. H. IRWIN, B.A.Sc.,
On Overseas Service.
3. J. ISBISTER, B.A.Sc., Onaway, Mich.
Onaway Electric Light and Power Co.
3. F. P. JACKES, B.A.Sc., Montreal, Que.
Traffic Dept., Bell Telephone Co.
- 1.*J. E. JACKSON, Oxford Centre, Ont.
1. E. W. JAMES, B.A.Sc., Winnipeg, Man.
Bridge Engineer, Manitoba Government.
- 1.*C. C. JOHNSON, B.A.Sc., Sudbury, Ont.
Chipman & Power.
1. C. E. JOHNSTON, B.A.Sc., Fairford, Man.
Dom. Land Surveyor.

*Diploma with honours.

1909—Continued

1. W. J. JOHNSTON, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
- 1.*A. H. E. KEFFER, North Bay, Ont.
With T. & N.O. Ry.
3. J. B. O. KEMP, B.A.Sc., Toronto, Ont.
With Toronto Structural Steel Co.
3. W. R. KEY, B.A.Sc., Toronto, Ont.
Asst. Engineer, Turnbull Elevator Co.
5. H. N. KLOTZ, B.A.Sc. (killed in action, France, 1915).
3. A. W. LAMONT, B.A.Sc., Toronto, Ont.
Sales Engineer, Toronto Hydro-Electric System.
- 3.*C. B. LANGMUIR, B.A.Sc., Toronto, Ont.
Manager, Electrical Dept., Factory Products, Ltd.
3. A. E. LENNOX, B.A.Sc., Cleveland, Ohio
Publicity Engineer, National Electric Lamp Association.
- 1.*R. W. E. LOUCKS, Regina, Sask.
Provincial Surveys Branch.
1. N. C. A. LLOYD, Solina, Ont.
3. E. D. MACFARLANE, B.A.Sc., Houston, Texas
With Houston Electric Ry. Co.
1. J. G. MACKINNON, Fitzhugh, Alta.
Resident Engineer, C.N.R.
1. W. A. MACLACHLAN, B.A.Sc.,
On Overseas Service.
3. B. A. MACLEAN, B.A.Sc., Orillia, Ont.
1. N. W. MACPHERSON, B.A.Sc., St. Thomas, Ont.
3. D. D. McALPINE, B.A.Sc., Hawkesbury, Ont.
Engineer, Riordon Paper and Pulp Co.
1. A. S. McARTHUR, B.A.Sc.,
On Overseas Service.
3. C. R. McCOLLUM, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
- 3.*A. S. McCORDICK, B.A.Sc., Sault Ste. Marie, Ont.
Assistant to City Engineer.
3. P. J. McCUAIG, B.A.Sc.,
On Overseas Service.
3. W. G. McINTOSH, B.A.Sc., Toronto, Ont.
Herbert Morris Crane and Hoist Co.
1. F. H. McKECHNIE, B.A.Sc., 11 Prince Arthur Ave., Toronto, Ont.
3. J. H. McKNIGHT, Simcoe, Ont.
3. G. McLEOD, Waupaca, Wis.
Electrician, Electric Light & Ry. Co.
1. V. McMILLAN, B.A.Sc., London, Ont.
Canadian Inspection Co.
3. N. H. MANNING, B.A.Sc., Toronto, Ont.
District Representative, Canadian Insp. & Testing Labs.
- 1.*A. B. MANSON, B.A.Sc., Stratford, Ont.
City Engineer.
1. E. S. MARTINDALE, B.A.Sc., Aylmer, Ont.
Dominion Land Surveyor.
1. O. W. MARTYN, B.A.Sc., D.L.S., S.L.S., Box 443, Swift Current, Sask.
2. C. A. MORRIS, B.A.Sc., Copper Cliff, Ont.
Canadian Copper Co.
3. G. MORTON, B.A.Sc., Calgary, Alta.
Canadian Westinghouse Co.

*Diploma with honours.

1909—Continued.

- 1.*F. V. MUNRO, B.A.Sc., Chatham, Ont.
 1. E. A. NEVILLE, B.A.Sc., Vancouver, B.C.
Neville & Stewart, Civil Engineers.
1. J. NEWTON, B.A.Sc.,
On Overseas Service.
- 3.*L. S. ODELL, Toronto, Ont.
Canadian Inspection and Testing Laboratories.
3. V. J. O'DONNELL, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. J. J. O'HEARN, Fort William, Ont.
Manager, Supply Dept., Canadian General Electric Co.
1. A. W. PAE, Calgary, Alta.
Davidson & Pae, Real Estate Brokers.
- 1.*A. M. PETRY, B.A.Sc., Toronto, Ont.
Assistant Manager, "Chas. Potter."
3. W. M. PHILP,
On Overseas Service.
1. R. B. PIGOTT, 157 Wentworth St. S., Hamilton, Ont.
 2. G. M. PONTON, 907 Herald Blk., Calgary, Alta.
Consulting Mining Engineer.
- 3.*C. J. PORTER, B.A.Sc., Portland, Oregon
Draftsman, Mount Hood Ry. & Power Co.
3. A. I. PROCTOR, 852 King St. E., Hamilton, Ont.
 1. J. QUAIL, Winnipeg, Man.
Manitoba Bridge and Iron Works.
1. A. F. RAMSPERGER, Toronto, Ont.
With Canada Foundry Co.
- 1.*C. R. REDFERN, B.A.Sc., Toronto, Ont
Engineer, P. Lyall & Sons, Ltd., Contractors.
- 3.*L. T. RUTLEDGE, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
1. A. U. SANDERSON, B.A.Sc., 10 Oaklands Ave., Toronto, Ont.
 3.*R. A. SARA, B.A.Sc., E.E., Winnipeg, Man.
Sales Manager, City Light and Power Dept.
- 3.*A. SCHLARBAUM, B.A.Sc., 5 Lansdowne Ave., Galt, Ont.
Hydro-Electric Engineer for R. P. & P. Co
- 3.*C. SCHWENGER, B.A.Sc., Toronto, Ont.
Electrical Department, City Hall.
1. C. A. SCOTT,
On Overseas Service.
1. A. SEDGWICK, Toronto, Ont.
Ontario Dept. of Public Works.
1. B. H. SEGRE, B.A.Sc.,
On Overseas Service.
1. F. V. SEIBERT, B.A.Sc., Edmonton, Alta.
Engineer and Surveyor, Dept. of Interior.
5. M. R. SHAW, B.A.Sc., Toronto, Ont.
 3. M. W. SPARLING, B.A.Sc., Campbellford, Ont.
Seymour Power and Elec. Co.
3. J. J. SPENCE, Toronto, Ont.
With Sovereign Construction Co.
1. D. S. STAYNER, B.A.Sc., C.E., Toronto, Ont.
Resident Engineer for Harbor Commission.

*Diploma with honours.

1909—Continued.

- 1.*N. C. STEWART, B.A.Sc., Vancouver, B.C.
Neville & Stewart.
- 1.*P. H. STOCK, 12 Fernwood Park Ave., Toronto, Ont.
- 1.*J. C. STREET, B.A.Sc., St. Catharines, Ont.
Welland Ship Canal.
3. S. STROUD, B.A.Sc., Toronto, Ont.
With Canadian Westinghouse Co.
1. C. C. SUTHERLAND, B.A.Sc., 446 Heiminck St., Edmonton, Alta.
City Engineer's Staff.
1. R. G. SWAN, B.A.Sc., New Westminster, B.C.
B. C. Hydrographic Survey.
1. A. D. SWORD, B.A.Sc., Toronto, Ont.
Shell Inspector.
- 1.*H. W. TATE, B.A.Sc.,
On Overseas Service.
- 3.*E. A. THOMPSON.
1. G. A. TIPPER, B.A.Sc., Brantford, Ont.
Contracting Surveyor.
3. A. G. TREES, B.A.Sc.,
On Overseas Service.
3. W. G. TURNBULL, B.A.Sc., Toronto, Ont.
Chief Engineer, Turnbull Elevator Co.
1. J. E. UNDERWOOD, Saskatoon, Sask.
McArthur, Murphy & Underwood.
1. C. P. VAN NORMAN, B.A.Sc., Toronto, Ont.
Asst. Engineer, Toronto & York Radial Ry. Co.
1. J. VAN NOSTRAND, 91 Delaware Ave., Toronto, Ont.
1. A. VATCHER, B.A.Sc., Freshwater, Bay de Verde, Nfld.
With the Reid Newfoundland Co.
1. C. M. WALKER, B.A.Sc., Banff, Alta.
Dom. Land Surveyor.
1. E. E. WEBB, Box 358, Orillia, Ont.
Contractor.
1. C. E. WEBB, B.A.Sc., 227 Spadina Rd., Toronto, Ont.
3. F. C. WHITE, B.A.Sc., Walkerville, Ont.
With Canadian Bridge Co.
3. A. R. WHITELAW, B.A.Sc., 10720 103rd St., Edmonton, Alta.
1. R. G. WILKINSON, Aberarder, Ont.
- 5.*J. A. McK. WILLIAMS, B.A.Sc., Toronto, Ont.
A. E. Ames & Co.
- 1.*O. T. G. WILLIAMSON, B.A.Sc., 1345 North Shore Ave., Chicago, Ill.
3. L. R. WILSON, B.A.Sc.,
On Overseas Service.
3. F. F. WILSON, B.A.Sc., Edmonton, Alta.
Surveyor.
2. S. A. WOOKEY, B.A.Sc., Timmins, Ont.
Field Engineer, Dominion Mineral Exploration Syndicate

1910.

2. J. H. ADAMS, B.A.Sc., 25 Maynard Ave., Toronto, Ont.
- 3.*O. F. ADAMS, B.A.Sc.,
On Overseas Service.
- 1.*W. G. AMSDEN, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1910—Continued.

1. J. A. BAIRD, B.A.Sc., Leamington, Ont.
With A. Baird, O.L.S., C.E.
- 1.*W. J. BAIRD, B.A.Sc.,
On Overseas Service.
1. H. A. BARNETT, B.A.Sc., 125 Yorkville Ave., Toronto, Ont.
- 1.*E. W. BERRY, Seaforth, Ont.
1. H. C. BINGHAM, D.L.S. New Grayson Bldg., Moose Jaw, Sask.
Engineer and Surveyor.
2. D. G. BISSET, B.A.Sc., Hosmer, B.C.
C.P.R. Coal Mines.
- 1.*R. H. H. BLACKWELL, B.A.Sc.
- 1.*E. P. BOWMAN, B.A.Sc., West Montrose, Ont.
2. A. F. BROCK, B.A.Sc., Copper Cliff, Ont.
Chief Mine Surveyor, with Canadian Copper Co.
3. M. O. BROWNE, 319 Lippincott St., Toronto, Ont.
3. J. R. BURGESS, B.A.Sc., Buffalo, N.Y.
With Howard Iron Works.
1. N. G. H. BURNHAM, B.A.Sc. (deceased).
- 3.*W. C. CALE, B.A.Sc., Keokuk, Ia.
Stone & Webster Engineering Corporation.
- 2.*A. D. CAMPBELL, B.A.Sc., M.E., Cobalt, Ont.
Mining Engineer, O'Brien Mine.
3. W. M. CARLYLE, B.A.Sc.,
On Overseas Service.
3. N. S. CAUDWELL, Toronto, Ont.
Student at Law, Osgoode Hall.
3. A. W. CHESNUT, B.A.Sc.,
On Overseas Service.
1. D. C. CHISHOLM, B.A.Sc., Winnipeg, Man.
Resident Engineer, C.N.R.
1. H. S. CLARK,
On Overseas Service.
1. J. A. CLAVEAU, Jonquiere, Que.
Assistant Engineer, Jonquiere Pulp Co.
3. L. S. COCKBURN, B.A.Sc., Wyandotte, Mich.
Engineering Dept., Pennsylvania Salt Mfg. Co.
3. A. G. CODE, B.A.Sc.,
On Overseas Service.
3. C. R. COLE, B.A.Sc., Toronto, Ont.
1. G. A. COLQUHOUN, B.A.Sc., Vankleek Hill, Ont.
- 4.*J. H. CRAIG, B.A.Sc.,
On Overseas Service.
- 3.*C. D. DEAN, B.A.Sc., 14 Wright Ave., Toronto, Ont.
5. A. V. DELAPORTE, B.A.Sc.,
On Overseas Service.
3. R. L. DOBBIN, B.A.Sc., Peterboro', Ont.
Waterworks Dept.
- 3.*W. P. DOBSON, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Com.
- 3.*J. M. DUNCAN, B.A.Sc.,
On Overseas Service.
1. L. F. EADIE,
On Overseas Service.
2. V. H. EMERY, B.A.Sc., Timmins, Ont.
Mine Supt., Hollinger Mines.

*Diploma with honours.

1910—Continued.

3. W. J. EVANS, B.A.Sc., Toronto, Ont.
 3. H. W. FAIRLIE, Montreal, Que.
Ry. Dept., The Northern Elec. & Mfg. Co.
 3.*C. R. FERGUSON, B.A.Sc., Toronto, Ont.
Dominion Bridge Co.
 3. J. W. FERGUSON, B.A.Sc., Lachine Locks, Que.
With Dominion Bridge Co.
 4.*J. B. K. FISKEN, B.A.Sc., Toronto, Ont.
 1. A. W. FLETCHER, B.A.Sc., Calgary, Alta.
Department of Public Works.
 1.*J. A. FLETCHER, Fisher River, Man.
Assistant to E. W. Robinson, D.L.S.
 3. F. T. FLETCHER, B.A.Sc., Calgary, Alta.
Dept. of Public Works.
 3. T. R. C. FLINT, B.A.Sc., Toronto, Ont.
 3. R. C. FOLLETT,
 2. J. M. FOREMAN, B.A.Sc., Lucan, Ont.
 1. W. J. FOSTER.
 3.*W. C. FOULDS, B.A.Sc., Toronto, Ont.
Roadways Dept., City Hall.
 1. A. FRASER, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
 2. J. FREDIN, London, Ont.
 3. H. GALL, B.A.Sc.,
On Overseas Service.
 1. M. M. GIBSON, B.A.Sc., Toronto, Ont.
Gibson & Gibson, O.L.S., C.E.
 1. J. M. GIBSON, B.A.Sc.,
On Overseas Service.
 1. V. A. E. GOAD, B.A.Sc., Montreal, P.Q.
Chas. E. Goad Co.
 3. V. S. GOODEVE, Hamilton, Ont.
With Canadian Westinghouse Co.
 1. H. GOODRIDGE.
 2. W. A. GORDON, Sundridge, Ont.
 3. V. F. GOURLAY, B.A.Sc., Galt, Ont.
Manufacturer.
 3. E. B. GRAHAM, B.A.Sc., 411 McNair Ave, Wilkinsburg, Pa.
 2. R. L. GREENE, B.A.Sc., Ottawa, Ont.
Agent, Canadian Allis-Chalmers, Ltd.
 5. J. H. HARRIS, B.A.Sc., Danforth Ave., Toronto, Ont.
W. Harris & Co.
 1. N. J. HARVIE, B.A.Sc.,
On Overseas Service.
 1. J. G. HELLIWELL (killed in action, France, 1915).
 1. J. F. HENDERSON, 62 St. Mary St., Toronto, Ont.
 3. F. G. HICKLING, B.A.Sc., East Pittsburgh, Pa.
Westinghouse Electric & Manufacturing Co.
 1. O. H. HOOVER, Calgary, Alta.
Dept. of the Interior.
 2. P. E. HOPKINS, B.A.Sc., Porcupine, Ont.
With Ontario Bureau of Mines.
 3.*W. J. IRWIN,
 2. F. L. JAMES, B.A.Sc., Tillsonburg, Ont.

*Diploma with honours.

1910—Continued.

3. E. A. Jamieson, Vancouver, B.C.
District Engineer, Water Rights Branch, Dept. of Lands.
1. H. C. JOHNSTON, 509 Palmerston Ave., Toronto, Ont.
 1. R. H. JOHNSTON, B.A.Sc., 10162 116th St., Edmonton, Alta.
 1. J. C. KEITH, B.A.Sc., Calgary, Alta.
 2.*J. T. KING, B.A.Sc., Toronto, Ont.
Lecturer in Mining Engineering, University of Toronto.
3. G. A. KINGSTONE, B.A.Sc., Toronto, Ont.
With Jones & Glassco.
2. G. L. KIRWAN, B.A.Sc., Ottawa, Ont.
Topographical Surveys Dept., Dept. of Interior.
5. P. T. KIRWAN, B.A.Sc., Ottawa, Ont.
Chemist, Inland Revenue Dept.
1. S. KNIGHT, B.A.Sc., Edmonton, Alta.
With Driscoll & Knight.
3. E. R. LAWLER, Toronto, Ont.
Toronto Hydro-Electric System.
- 3.*C. B. LEAVER, B.A.Sc., 459 Bloor St., Toronto, Ont.
 3. R. G. LEE, B.A.Sc.,
On Overseas Service.
1. J. N. LEITCH (deceased).
 1. J. C. LONGSTAFF, 20 Webster Ave., Toronto, Ont.
 3. J. B. MACDONALD, B.A.Sc., Box 83, Ottawa, Ont.
 2. A. D. MACDONALD, B.A.Sc., Cobalt, Ont.
Asst. Supt. Penn-Canadian Mine.
1. J. A. MACDONALD, B.A.Sc., Box 83, Ottawa, Ont.
 1. G. A. MACDONALD, B.A.Sc., Fernie, B.C.
 1. A. E. MACGREGOR, B.A.Sc.,
On Overseas Service.
1. E. G. MACKAY, B.A.Sc.,
On Overseas Service.
1. G. G. MACLENNAN, B.A.Sc.,
On Overseas Service.
1. D. D. MACLEOD, B.A.Sc.,
On Overseas Service.
3. H. G. MACMURCHY, B.A.Sc., Messina, N.Y.
 3.*H. J. MACTAVISH, B.A.Sc.,
On Overseas Service.
4. T. C. MCBRIDE, B.A.Sc., 501 Colborne St., London, Ont.
 1. S. G. MCDUGALL, B.A.Sc., 287 McLaren St., Ottawa, Ont.
 1.*T. A. MCELHANNEY, B.A.Sc., 706 Dominion Trust Bldg., Vancouver, [B.C.]
McElhanney Bros., Civil Engineers, D. & B.C. Land Surveyors.
- 1.*P. J. MCGARRY, D.L.S., O.L.S., Toronto, Ont.
 3.*L. R. MCKIM, Brantford, Ont.
 1.*J. MCNIVEN, B.A.Sc., Moose Jaw, Sask.
Resident Engineer, Dept. of Trade and Commerce.
3. J. I. MCSLOY, B.A.Sc.,
On Overseas Service.
2. A. W. R. MAISONVILLE, B.A.Sc., Montreal, Que.
Dominion Bridge Co.
- 1.*N. MARR, B.A.Sc., Prince Albert, Sask.
With C. H. Mitchell & P. H. Mitchell.
- 1.*W. H. MARTIN, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.

*Diploma with honours.

1910—Continued.

2. A. C. MATTHEWS, B.A.Sc., 89 St. George St., Toronto, Ont.
 1. C. H. MEADER, B.A.Sc., O.L.S., Toronto, Ont.
 3.*H. O. MERRIMAN, B.A.Sc.,
On Overseas Service.
 1.*D. J. MILLER,
On Overseas Service.
 1. F. S. MILLIGAN, B.A.Sc.,
On Overseas Service.
 3. P. E. MILLS, B.A.Sc., 52 Howland Ave., Toronto, Ont.
 3. J. P. MORGAN, Toronto, Ont.
With Orpen Construction Co.
 1. F. R. MORTIMER, B.A.Sc., Ottawa, Ont.
Hydrographic Survey, Dept. of Interior.
 1. A. H. MUNRO, B.A.Sc.,
On Overseas Service.
 3. J. C. NASH, B.A.Sc.,
On Overseas Service.
 1.*V. A. NEWHALL, B.A.Sc., Calgary, Alta.
Dept. of Interior.
 2.*W. E. NEWTON, B.A.Sc., Sandon, B.C.
Slocan Star Mines.
 1. F. T. NICHOL, B.A.Sc.,
On Overseas Service.
 1. C. M. O'NEIL, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
 3. C. E. PALMER, B.A.Sc., E.E., Toronto, Ont.
Bell Telephone Co.
 3. G. C. PARKER, B.A.Sc., Toronto, Ont.
Roadways Branch, Dept. of Public Works.
 3. K. K. PEARCE, B.A.Sc., Lachine, Que.
Dominion Bridge Co.
 1. A. W. PEARSON.
 3. C. H. PHILLIPS, B.A.Sc., 157 Margueretta St., Toronto, Ont.
 1. D. E. PYE, Cranbrook, B.C.
 1. W. S. RAMSAY, B.A.Sc., Montreal, Que.
With Dominion Bridge Co.
 3. B. J. REDFERN (deceased).
 3. C. E. RICHARDSON, B.A.Sc., Nelson, B.C.
Division Engineer, Dept. of the Interior.
 1. H. C. RITCHIE, Calgary, Alta.
Dept. of Public Works.
 1. O. W. ROSS, B.A.Sc., St. Catharines, Ont.
Welland Canal Survey.
 1. W. F. B. RUBIDGE, Montreal, Que.
Dominion Bridge Co.
 3. W. C. SHAW, B.A.Sc., Toronto, Ont.
Hamilton Gear and Machine Co.
 3. N. C. SHERMAN, Esquimalt, B.C.
Ordnance Office.
 1.*W. C. SMITH, B.A.Sc., Victoria, B.C.
Engineer, Water Rights Branch, Dept. of Lands.
 2. F. L. SMITH,
On Overseas Service.

*Diploma with honours.

1910—Continued.

5. G. E. SMITH, B.A.Sc., Bozeman, Mont.
Agricultural College.
2. R. J. SPRY, B.A.Sc., Nelson, B.C.
Supt., The B.C. Copper Co.
2. A. L. STEELE, B.A.Sc.,
On Overseas Service.
- 2.*H. M. STEVEN, B.A.Sc., Timmins, Ont.
Mine Engineer; Canadian Mining and Finance Co.
- 1.*L. I. STONE, London, Ont.
Resident Engineer, G.T. Ry.
3. A. L. SUTHERLAND, B.A.Sc., Peterboro', Ont.
With Canadian General Electric Co.
3. E. A. TERNAN, B.A.Sc.,
On Overseas Service.
- 5.*W. H. THOM, Toronto, Ont.
Factory Manager, Lyman's Drug & Chemical Co.
3. H. B. THOMPSON, B.A.Sc., Sarnia, Ont.
Engineering Dept., Imperial Oil Co.
3. R. M. A. THOMPSON, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Com.
- 2.*C. G. TITUS, Cobalt, Ont.
Engineer, Timiskaming Mine.
3. K. M. VAN ALLEN, B.A.Sc.,
On Overseas Service.
1. L. T. VENNEY, B.A.Sc., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
1. N. WAGNER, 19 Gerrard St. E., Toronto, Ont.
Bridge Dept., Canada Foundry Co.
1. R. M. WALKER, B.A.Sc., 232 St. James St., Montreal, Que.
With Walter J. Francis & Co., Consulting Engineers.
2. T. WALTON, B.A.Sc. (deceased).
1. G. A. WARRINGTON, B.A.Sc., Winnipeg, Man.
M.L.S., Parliament Bldgs.
3. M. B. WATSON, B.A.Sc.,
On Overseas Service.
- 3.*H. M. WHITE, Lachine Locks, Que.
With Dominion Bridge Co.
1. J. L. WHITSIDE, B.A.Sc.,
On Overseas Service.
4. W. S. WICKENS, B.A.Sc.
- 3.*G. K. WILLIAMS, B.A.Sc.,
On Overseas Service.
- 1.*W. H. WILSON, B.A.Sc., Toronto, Ont.
McGregor & McIntyre, Ltd.
3. G. E. WOODLEY (deceased).
1. G. R. WORKMAN, Toronto, Ont.
Canadian Inspection Co.
3. L. A. WRIGHT, B.A.Sc., 278 Jarvis St., Toronto, Ont.
Asst. Engineer, C.P.R.
- 3.*A. W. YOEUELL, B.A.Sc., Sherbrooke, Que.
Canadian Ingersoll Rand Co.
1. W. S. YOUNG, B.A.Sc., Guelph, Ont.

*Diploma with honours.

1911.

- 5.*J. AITKEN, B.A.Sc.,
National Synthetic Co. Perth Amboy, N.J.
1. L. B. ALLAN, B.A.Sc., Toronto, Ont.
3. E. G. ARCHER, B.A.Sc.,
Hydro-Electric Power Com. Toronto, Ont.
1. L. A. BADGLEY, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
1. T. H. BARTLEY, B.A.Sc., O.L.S., Sturgeon Falls, Ont.
Toronto Power Co.
- 2.*H. L. BATTEN,
With Copper Queen Smelter. Box 564, Douglas, Ariz.
1. G. L. BERKELEY,
On Overseas Service.
- 3.*J. H. BILLINGS, B.A.Sc., Baltimore, Md.
On staff Johns Hopkins University.
- 2.*J. R. BISSETT, B.A.Sc., Toronto, Ont.
3. W. O. BOSWELL, Toronto, Ont.
1. F. BOWMAN,
Dominion Bridge Co. Lachine, Que.
3. T. W. BRACKINREID, B.A.Sc., Naughton, Ont.
Electrical Supt., Canadian Exploration Co.
2. W. M. BROCK, B.A.Sc.,
On Overseas Service.
1. W. H. D. BROUSE, B.A.Sc., Toronto, Ont.
With Smith, Kerry & Chace.
3. H. BROWN, B.A.Sc., Calgary, Alta.
Dept. of the Interior.
- 3.*E. T. CAIN, B.A.Sc., Toronto, Ont.
1. C. S. CAMERON, Beaverton, Ont.
1. C. D. CAMPBELL,
Town Engineer. Galt, Ont.
- 6.*W. W. CHADWICK, B.A.Sc., Hamilton, Ont.
Asst. Manager, Canadian Chadwick Metal Co.
1. R. B. CHANDLER, B.A.Sc., Saskatoon, Sask.
Asst. City Engineer.
1. P. G. CHERRY, B.A.Sc., Toronto, Ont.
Advertising Sales Manager, Might Directories, Ltd.
3. E. F. CHESNUT, B.A.Sc.,
On Overseas Service.
1. H. J. CLARK, B.A.Sc., Toronto, Ont.
1. F. W. CLARK, 669 Spadina Ave., Toronto, Ont.
3. F. S. CLEARY (deceased).
- 2.*D. B. COLE, B.A.Sc., Cleveland, Ohio
Cleveland Cadillac Co.
- 3.*A. S. COOK, B.A.Sc., Southampton, Ont.
Saugeen Light and Power Co.
1. C. W. CORNELL, New Westminster, B.C.
Jones, Cornell Const. Co. Ltd.
1. M. E. CROUCH, Pembroke, Ont.
With H. J. Beatty.
1. O. F. CUMMINS, Regina, Sask.
Provincial Drainage Engineer
3. W. M. CRUTHERS, B.A.Sc., Peterboro', Ont.
Can. Gen. Electric Co.

*Diploma with honours.

1911—Continued.

3. T. J. CUNERTY, East Pittsburgh, Pa.
With Westinghouse Elec. Co.
1. C. H. CUNNINGHAM, B.A.Sc., Toronto, Ont.
Engineer, Frank Barber & Co.
1. J. H. CURZON, 178 Kingston Rd., Toronto, Ont.
 3.*F. K. D'ALTON, B.A.Sc., Ridley College, St. Catharines, Ont.
Instructor in Physics.
1. W. B. DAVIS, B.A.Sc., Toronto, Ont.
3. F. C. DEGUERRE, B.A.Sc., Vancouver, B.C.
B.C. Electric Co.
- 3.*F. H. DOWNING, Winnipeg, Man.
With Manitoba Bridge & Iron Works.
1. W. B. DUNBAR, B.A.Sc., Toronto, Ont.
5. C. H. ECKERT, B.A.Sc., Perth Amboy, N.J.
National Synthetic Co.
3. J. A. ELLIOT, B.A.Sc., Niagara Falls, N.Y.
Castner Electrolytic Alkali Co.
1. G. R. ELLIOTT, B.A.Sc.,
On Overseas Service.
1. C. F. ELLIOTT, B.A.Sc., Toronto, Ont.
Student at Law, Osgoode Hall.
1. K. A. FARRELL, B.A.Sc., Toronto, Ont.
3. T. J. FARRELLY,
On Overseas Service.
1. S. E. FLOOK, B.A.Sc., Port Arthur, Ont.
O. L. Surveyor and Civil Engineer.
3. C. C. FLYNN, London, Ont.
5. E. L. FRANKEL, B.A.Sc., Toronto, Ont.
Frankel Bros.
2. E. E. FREELAND, B.A.Sc., Ottawa, Ont.
Hydrographic Surveys Branch.
1. J. R. FREEMAN, B.A.Sc., Toronto, Ont.
- 4.*H. P. FRID, B.A.Sc.,
On Overseas Service.
3. R. J. FULLER, B.A.Sc., Toronto, Ont.
City Architect's Dept.
- 5.*J. L. GOODERHAM, B.A.Sc., Toronto, Ont.
General Distilling Co.
3. R. E. GREEN, B.A.Sc., Toronto, Ont.
3. E. A. GREENE, B.A.Sc.,
On Overseas Service.
3. H. G. HALL, Woodstock, Ont.
1. G. M. HAMILTON, B.A.Sc., Port Colborne, Ont.
Asst. Engineer, Welland Ship Canal.
2. M. B. HEEBNER, B.A.Sc., Coquitlam, B.C.
With The Foundation Co.
2. F. I. HELSON, Newburgh, Ont.
With C.N. Ry.
3. H. R. HILL, B.A.Sc., Toronto, Ont.
Hydro-Electric System.
1. A. J. HUFF, B.A.Sc.,
1. K. HUFFMAN, 30 Cowan Ave., Toronto, Ont.
- 1.*H. HYATT, B.A.Sc., Toronto, Ont.
- 1.*R. H. JARVIS, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1911—Continued.

- 1.*L. E. JONES,
On Overseas Service.
- 1.*E. A. KELLY, 119 Maryland St., Winnipeg, Man.
Construction Dept., C.P.R.
- 3.*M. KIRKWOOD, B.A.Sc., Ampire, N.J.
Crocker-Wheeler Co.
- 2.*J. LANNING, B.A.Sc., Box 673, Whitby, Ont.
2. M. I. LIEBERMAN, B.A.Sc., Toronto, Ont.
3. G. L. LILLIE, B.A.Sc., Toronto, Ont.
With Toronto Hydro-Electric System.
6. A. L. LONG, B.A.Sc., Toronto, Ont.
Chemist, Park, Blackwell & Co.
- 1.*A. W. P. LOWRIE, B.A.Sc.,
On Overseas Service.
3. W. M. MACANDREW, B.A.Sc., Vancouver, B.C.
Allis-Chalmers-Bullock Co.
- 3.*R. V. MACAULAY, B.A.Sc.,
On Overseas Service.
- 2.*J. T. MACBAIN, Niagara Falls, N.Y.
Union Carbide Co.
- 1.*R. E. A. MACBETH, B.A.Sc.,
On Overseas Service.
1. F. M. MACDONALD, B.A.Sc., Toronto, Ont.
Contractor.
- 3.*W. S. MACKENZIE, Woodstock, Ont.
With Canadian Linderman Co., Ltd.
- 1.*J. G. MACLAURIN, B.A.Sc., Box 621, Sault Ste. Marie, Ont.
1. J. B. McANDREW, B.A.Sc., St. Catharines, Ont.
- 3.*J. A. McEACHREN, Strathburn, Ont.
3. R. W. McELROY, B.A.Sc., Toronto, Ont.
3. H. J. McEWEN, B.A.Sc., Toronto, Ont.
- 3.*W. G. MCGHIE, B.A.Sc.,
On Overseas Service.
3. D. A. MCKENZIE, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Com.
2. A. J. McLAREN, B.A.Sc.,
On Overseas Service.
3. A. G. MCLEISH, Toronto, Ont.
Canada Crude Oil Co.
- 1.*R. A. McLELLAN, B.A.Sc., Saskatoon, Sask.
With Murphy & Underwood.
2. W. B. McPHERSON, B.A.Sc.,
On Overseas Service.
3. A. A. McQUEEN, B.A.Sc.,
On Overseas Service.
- 4.*H. H. MADILL, B.A.Sc.,
On Overseas Service.
3. J. C. MARTIN, B.A.Sc., Montreal, Que.
Northern Electric Co.
3. C. A. MEADOWS, B.A.Sc., Box 467, Lachine Locks, Que.
With Dominion Bridge Co.
1. L. G. MILLS, B.A.Sc.,
On Overseas Service.
5. L. C. MITCHELL, Bay City, Mich.
2. J. A. MORPHY, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1911—Continued.

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|---|--------------------------|
| 1. M. H. MURPHY, B.A.Sc.,
<i>Contractor.</i> | Toronto, Ont. |
| 1. J. C. MURTON,
<i>Staff of City Engineer.</i> | Toronto, Ont. |
| 3. E. H. NIEBEL, B.A.Sc.,
<i>Town Electrical Supt.</i> | Melfort, Sask. |
| 3. C. K. NIXON, B.A.Sc., | Detroit, Mich. |
| 3. E. S. NOBLE, B.A.Sc.,
<i>Canadian General Electric Co.</i> | Peterboro', Ont. |
| 1. R. K. NORTHEY, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 2. W. A. O'FLYNN, B.A.Sc.,
<i>Mond Nickel Co.</i> | Coniston, Ont. |
| 1. W. V. OKE, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 2. J. A. ORR, B.A.Sc., | Toronto, Ont. |
| 3. J. S. PARKER, B.A.Sc., | Burk's Falls, Ont. |
| 3.*J. H. PARKIN,
<i>Lecturer in Mechanical Engineering, University of Toronto.</i> | Toronto, Ont. |
| 1.*J. MCD. PATTON, B.A.Sc., | Toronto, Ont. |
| 3. C. L. PEARSON,
<i>With Calgary Power Co.</i> | Kananaskis, Alta. |
| 2. S. J. PEPLER, | Huron St., Toronto, Ont. |
| 3.*W. J. PERRIN, B.A.Sc., | Toronto, Ont. |
| 1. B. W. PICK, B.A.Sc.,
<i>With Smith & Phillips.</i> | Regina, Sask. |
| 3.*E. H. PORTE, | Aylmer West, Ont. |
| 1.*F. M. PRATT, B.A.Sc.,
<i>Res. Engineer, Const. Dept. E. B. Eddy Co.</i> | Ottawa, Ont. |
| 4. H. PULLAN,
<i>With E. Pullan.</i> | Toronto, Ont. |
| 1. L. J. QUINLAN, B.A.Sc.,
<i>Topographical Surveys Branch, Dept. of Interior.</i> | Ottawa, Ont. |
| 1. L. W. RAILTON,
<i>P. G. E. Railway.</i> | Cheakamus, B.C. |
| 1.*J. E. RATZ, B.A.Sc.,
<i>Dominion Observatory.</i> | Ottawa, Ont. |
| 1. F. N. READ, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 4. E. V. REID,
<i>On Overseas Service.</i> | |
| 1.*W. A. RICHARDSON, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1.*W. E. ROBINSON, B.A.Sc., | Toronto, Ont. |
| 1. H. L. ROBLIN, B.A.Sc.,
<i>Canadian Inspection Co.</i> | Galt, Ont. |
| 3. L. W. ROTHERY, B.A.Sc.,
<i>Allis-Chalmers Manufacturing Co.</i> | Milwaukee, Wis. |
| 4.*T. L. F. ROWE,
<i>Structural Engineer, Hospital for Insane.</i> | Whitby, Ont. |
| 3. A. S. RUNCIMAN,
<i>With Canadian Westinghouse Co.</i> | Calgary, Alta. |
| 3. F. G. RUTLEY, B.A.Sc.,
<i>On Overseas Service.</i> | |

*Diploma with honours.

1911—Continued.

1. E. M. SALTER,
Draftsman, C.N.O. Ry. Nipigon, Ont.
1. F. R. SCANDRETT, B.A.Sc.,
- 5.*J. W. SCOTT, B.A.Sc., Toronto, Ont.
Medical Health Dept.
3. N. D. SEATON, B.A.Sc., 360 Stewart St., Peterboro, Ont.
1. N. SHARPE, 901 Boyd Bldg., Winnipeg, Man.
Greater Winnipeg Water District.
- 4.*P. SHEARD,
On Overseas Service.
- 1.*W. A. SIBBETT, Bracebridge, Ont.
- 2.*C. P. SILLS, B.A.Sc.,
On Overseas Service.
- 1.*K. H. SMITH, Ottawa, Ont.
Water Power Branch, Dept. of the Interior.
3. M. L. SMITH, B.A.Sc., Toronto, Ont.
Director of Engineering, Technical High School.
1. R. G. SNEATH, Thorold, Ont.
Welland Canal Survey.
- 3.*G. E. SQUIRE, B.A.Sc., Toronto, Ont.
3. W. S. STEELE, B.A.Sc., Brooklyn, N.Y.
Brooklyn Rapid Transit Co.
- 5.*A. E. STEWART, B.A.Sc.,
On Overseas Service.
- 3.*R. O. STEWART, B.A.Sc., Moncton, N.B.
Bridge Dept., Intercolonial Ry.
- 3.*R. A. STORY, B.A.Sc., Vancouver, B.C.
B.C. Telephone Co.
1. C. F. SZAMMERS,
On Overseas Service.
3. R. TAYLOR, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
1. J. B. TEMPLE, B.A.Sc., Montreal, Que.
Dominion Bridge Co.
3. G. C. THOMAS, Barrie, Ont.
Assistant Manager, Simcoe Fruits, Ltd.
1. R. D. TORRANCE, B.A.Sc.,
On Overseas Service.
1. W. G. TOUGH, B.A.Sc., Toronto, Ont.
With Roman Stone Co.
- 1.*N. VICKERS, North Battleford, Sask.
2. J. H. C. WAITE, B.A.Sc., Cobalt, Ont.
Comet Mine.
1. W. D. WALCOTT, B.A.Sc.,
On Overseas Service.
3. G. L. WALLACE, B.A.Sc., Toronto, Ont.
Demonstrator in Physics, University of Toronto.
1. A. WARDELL, B.A.Sc., Toronto, Ont.
1. F. E. WATSON, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
- 3.*P. G. WELFORD, B.A.Sc., Newark, N.J.
Hyatt Roller Bearing Co.
2. A. G. WHEELER, B.A.Sc., Norfolk, Va.
Sec'y-Treas. J. R. Wheeler Sons Co.
3. G. H. WILKES, B.A.Sc.,
On Overseas Service.

*Diploma with honours

1911—Continued.

- 5.*E. R. WILLIAMS, Shawinigan Falls, Que.
Chemist, Electrometals Co.
- 3.*H. A. WILSON, Glenora, Ont.
Supt., J. C. Wilson & Co., Mechanical Engineers.
3. C. S. WOOD, Courtenay, B.C.
Electrical Engineer.
1. W. G. WORDEN, B.A.Sc., Oshawa, Ont.
Town Engineer.
- 1.*W. J. T. WRIGHT, B.A.Sc.,
On Overseas Service.
1. F. H. WRONG, D.L.S., Sandwich, Ont.
On Overseas Service.
2. W. H. WYLIE, B.A.Sc.,
On Overseas Service.
3. H. K. WYMAN,
On Overseas Service.
3. L. P. YORKE, Edmonton, Alta.
Wiring Inspector, City of Edmonton.
1. S. YOUNG, B.A.Sc., D. & S.L.S., Regina, Sask.
Public Works Dept.
- 3.*A. YOUNG, B.A.Sc., Toronto, Ont.
Instructor, Technical High School.
1. W. E. ZINKAN, Southampton, Ont.
Dominion Land Surveyor.

Owing to change of course from three to four years, there were no graduates in 1912.

*Diploma with honours.

1913.

- 7.*R. J. ALLEN, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
- 3.*A. S. ANDERSON, B.A.Sc.,
On Overseas Service.
- 1.*C. R. AVERY, M.A.Sc.,
On Overseas Service.
- 4.*L. C. M. BALDWIN, B.A.Sc.,
On Overseas Service.
1. F. W. BEATTY, B.A.Sc.,
On Overseas Service.
- 1.*W. B. BEATTY, B.A.Sc., O.L.S., Sarnia, Ont.
On Overseas Service.
2. C. A. BELL,
On Overseas Service.
- 1.*B. S. BLACK, B.A.Sc.
1. D. BLAIN, B.A.Sc., Toronto, Ont.
Draftsman, Canada Foundry Co.
7. E. R. BONTER, B.A.Sc., Montreal, Que.
Crocker-Wheeler Co.
- 7.*L. R. BRERETON, B.A.Sc.,
On Overseas Service.
2. T. R. BUCHANAN, B.A.Sc., Sudbury, Ont.
Creighton Mine.
- 7.*W. B. BUCHANAN, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
3. B. H. A. BURROWS, B.A.Sc., Toronto, Ont.
Can. Allis-Chalmers, Ltd.

*Degree with honours.

1913—Continued.

2. W. B. CALDWELL, B.A.Sc., Toronto, Ont.
1. O. L. CAMERON, B.A.Sc.
On Overseas Service.
1. L. L. CAMPBELL, B.A.Sc.
- 3.*R. M. CARMICHAEL, B.A.Sc., Kenora, Ont.
1. G. M. CARRIE, B.A.Sc.
2. H. A. CLARK, B.A.Sc., Toronto, Ont.
- 6.*G. E. CLARKSON, B.A.Sc.,
On Overseas Service.
- 3.*B. D. CLEGG, B.A.Sc., Peterboro, Ont.
7. J. H. COLEMAN, B.A.Sc., 17 Farnham Ave., Toronto, Ont.
- 1.*G. M. COOK, B.A.Sc., Detroit, Mich.
Trussed Concrete Steel Co.
- 4.*B. R. COON, B.A.Sc., Temple Bldg., Toronto, Ont.
Architect.
2. W. T. CURTIS, B.A.Sc.,
On Overseas Service.
1. A. J. DATES, B.A.Sc., 28 Homestead Park, Lawark, N.J.
3. H. D. DAVISON, B.A.Sc., Port Weller, Ont.
Section 1, Welland Ship Canal.
7. E. L. DEITCH, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Com.
- 2.*R. W. DIAMOND, B.A.Sc., Anaconda Mont.
Anaconda Mining Co.
7. W. G. DUNCAN, B.A.Sc., Port Dover, Ont.
1. F. R. FIDDES, B.A.Sc.
1. D. H. FLEMING, B.A.Sc., Toronto, Ont.
Sewers Dept. City Hall.
3. F. F. FOOTE, B.A.Sc., St. Catharines, Ont.
- 1.*J. S. GALBRAITH, B.A.Sc.,
On Overseas Service.
2. W. H. GARNHAM, B.A.Sc.
1. A. M. GERMAN, B.A.Sc.
1. H. M. GOODMAN, B.A.Sc., Montreal, Que.
Sewers Dept., City Hall.
1. A. G. GRAY, B.A.Sc.,
On Overseas Service.
- 1.*E. R. GRAY, B.A.Sc., Hamilton, Ont.
Deputy City Engineer.
3. A. J. Gray, B.A.Sc.
On Overseas Service.
7. J. P. HADCOCK, B.A.Sc., Peterboro, Ont.
Can. Gen. Elec. Co.
1. H. A. HAWLEY, B.A.Sc., Toronto, Ont.
Lewis Construction Co.
7. H. C. HARRIS.
- 1.*R. L. HEARN, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Com.
- 1.*H. J. HEINONEN, B.A.Sc., New York, N.Y.
Columbia University.
- 1.*R. A. HENRY, B.A.Sc., Box 144, Lachine Locks, Que.
- 7.*T. A. HILL, B.A.Sc., Ninga, Man.
- 1.*O. HOLDEN, B.A.Sc., Toronto, Ont.
Hydro Power Com.

*Degree with honours.

1913—Continued.

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|---|----------------------------------|
| 1. J. T. HOWARD, B.A.Sc.,
<i>Demonstrator in Drawing, University of Toronto.</i> | Toronto, Ont. |
| 7.*T. F. HOWLETT, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. E. T. IRESON, B.A.Sc. | |
| 1. G. R. JOHNSON, B.A.Sc., | Fernie, B.C. |
| 1. R. L. JUNKIN, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 7.*S. S. KELLY, | Lambeth, Ont. |
| 7. A. E. KERR, B.A.Sc.,
<i>Can. Westinghouse Co.</i> | Hamilton, Ont. |
| 7. C. E. KILMER,
<i>On Overseas Service.</i> | |
| 1. J. S. LAING, B.A.Sc.,
<i>Town Engineer.</i> | Barrie, Ont. |
| 4.*H. D. LIVINGSTON, B.A.Sc. | |
| 1.*K. F. MICKLEBOROUGH, B.A.Sc., | Cornwall, Ont. |
| 7.*G. J. MICKLER, B.A.Sc.,
<i>Hydro-Electric Commission.</i> | Toronto, Ont. |
| 1. N. C. MILLMAN, B.A.Sc.
<i>On Overseas Service.</i> | |
| 1. F. J. MULQUEEN, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1.*W. C. MURDIE, M.A.Sc.,
<i>On Overseas Service.</i> | |
| 2. D. A. S. MUTCH, B.A.Sc.,
<i>Dome Mines.</i> | Porcupine, Ont. |
| 1.*H. R. MACKENZIE, B.A.Sc.,
<i>Inspecting Engineer, Board of Highway Commissioners.</i> | Regina, Sask. |
| 1. A. R. MACPHERSON, B.A.Sc. | |
| 6.*K. S. MACLACHLAN, B.A.Sc.,
<i>National Synthetic Co.</i> | Perth Amboy, N.J. |
| 1. W. H. MACTAVISH, B.A.Sc.
<i>On Overseas Service.</i> | |
| 1. T. V. MCCARTHY, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 4.*R. S. MCCONNELL, B.A.Sc.,
<i>Architect.</i> | 12 Rosemount Ave., Toronto, Ont. |
| 1. W. L. McFAUL, B.A.Sc. | |
| 2.*K. L. NEWTON, B.A.Sc.,
<i>Canadian Copper Co.</i> | Copper Cliff, Ont. |
| 5.*C. J. OTTO, B.A.Sc.,
<i>Gutta Percha and Rubber Mfg. Co.,</i> | Toronto, Ont. |
| 1.*N. F. PARKINSON, M.A.Sc.,
<i>On Overseas Service.</i> | |
| 7.*J. W. PEART, B.A.Sc. | |
| 1.*E. PERRON, B.A.Sc. | |
| 1. H. C. QUAIL, B.A.Sc. | |
| 7.*E. G. RATZ,
<i>With Canadian Westinghouse Co.</i> | Hamilton, Ont. |
| 1.*J. M. RIDDELL, B.A.Sc.
<i>On Overseas Service.</i> | |
| 1.*J. E. RITCHIE, B.A.Sc.,
<i>On Overseas Service.</i> | |

*Degree with honours.

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1913—Continued.

- 1.*C. S. ROBERTSON, M.A.Sc., Toronto, Ont.
Public Health Dept.
- 7.*C. C. ROUS, B.A.Sc., 59 St. Cyrille St., Quebec, Que.
Captain, Engineers.
7. C. H. RUSSELL, B.A.Sc., Hamilton, Ont.
Can. Westinghouse Co.
- 7.*A. A. SCARLETT, B.A.Sc.
- 1.*L. SEWELL, B.A.Sc.
- 7.*M. C. SHARP, B.A.Sc., Toronto, Ont.
York Co. Roadway Dept.
- 3.*K. E. SHAW, B.A.Sc., Wallaceburg, Ont.
Dominion Sugar Co.
- 3.*F. R. SIMS, B.A.Sc., Ottawa, Ont.
Dept. of Customs.
- 2.*D. G. SINCLAIR, B.A.Sc., Copper Cliff, Ont.
Canadian Copper Co.
- 4.*R. W. SOPER, B.A.Sc.
1. W. A. SPELLMAN, B.A.Sc., Toronto, Ont.
City Engineer's Dept.
- 7.*J. M. STRATHY, B.A.Sc.
On Overseas Service.
1. D. SUTHERLAND, B.A.Sc.,
On Overseas Service.
- 1.*J. M. THOMPSON, B.A.Sc., Hamilton, Ont.
Hamilton Bridge Co.
- 2.*W. K. THOMPSON, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
- 7.*D. J. THOMSON, Toronto, Ont.
Demonstrator in Mechanical Engineering, University of Toronto.
7. T. E. TORRANCE, B.A.Sc., Toronto.
Bell Telephone Co.
2. R. M. TROW, B.A.Sc.
- 1.*W. G. URE, B.A.Sc., 7 Sultan St., Toronto, Ont.
- 1.*C. F. VON GUNTEN, B.A.Sc., 17 Indian Rd. Cres., Toronto, Ont.
3. R. E. WATTS, B.A.Sc.,
On Overseas Service.
- 3.*C. A. WEBSTER, B.A.Sc., Galt, Ont.
Sheldons, Limited.
- 4.*H. WEBSTER, B.A.Sc.,
On Overseas Service.
1. D. H. WEIR, B.A.Sc.
1. W. S. WINTERS, B.A.Sc.
1. R. F. B. WOOD, B.A.Sc.,
On Overseas Service.
- 7.*A. J. WRIGHT, B.A.Sc.,
On Overseas Service.
7. R. B. YOUNG, B.A.Sc., Toronto, Ont.
With H.E.P.C.

1914

1. E. M. ABENDANA, B.A.Sc.,
On Overseas Service.
- 1.*F. C. ADSETT, B.A.Sc., Guelph, Ont.
- 1.*J. L. ALTON, B.A.Sc., Toronto, Ont.
Dept. of Public Works for Ontario.

*Degree with honours.

1914—Continued.

- 2.*F. C. ANDREWS, B.A.Sc. (killed in action, France, 1915).
 7. C. E. ARMER, B.A.Sc.
 2.*H. R. BANKS, B.A.Sc.
 1. E. L. BEDARD, B.A.Sc.
 1.*H. J. BEDARD, B.A.Sc.
 1. J. T. BELCHER, B.A.Sc.,
With H.E.P.C. Guelph, Ont.
 1. S. G. BENNETT, B.A.Sc.,
On Overseas Service.
 1. P. V. BINNS, B.A.Sc.,
On Overseas Service.
 1.*J. M. BLYTH, B.A.Sc.
 5. A. R. BONHAM, B.A.Sc.
 1.*J. H. W. BOWER, B.A.Sc.
 3.*H. H. BROWN, B.A.Sc.,
 7.*W. D. BROWN, B.A.Sc. Port Hope, Ont.
 1.*D. H. CAMPBELL, B.A.Sc.
 3.*H. M. CAMPBELL, B.A.Sc.,
On Overseas Service.
 1.*J. J. CAMPBELL, B.A.Sc.,
On Overseas Service.
 6.*C. N. CANDEE, B.A.Sc.,
Synthetic Drug Co. Toronto, Ont.
 2. R. T. CARLYLE, B.A.Sc.
 2. J. M. CARTER, B.A.Sc.,
On Overseas Service.
 2. E. V. CHAMBERS, B.A.Sc.,
On Overseas Service.
 1.*R. M. CHRISTIE, B.A.Sc., 9847 91st Ave., Edmonton South, Alta.
 3. K. M. CLIPSHAM, B.A.Sc.,
Clipsham & Delamere. Toronto, Ont.
 1. J. W. CRASHLEY, B.A.Sc.,
On Overseas Service.
 7.*A. W. CRAWFORD, B.A.Sc.,
On Overseas Service.
 1.*W. CUTHBERTSON, B.A.Sc.
 1. G. F. DALTON, B.A.Sc.,
Geodetic Survey. Ottawa, Ont.
 1.*R. DASHWOOD, B.A.Sc.,
On Overseas Service.
 1.*R. D. DAVIDSON, B.A.Sc.,
With A. H. Hawkins, D.L.S. Le Pas, Man.
 3. R. D. DELAMERE, B.A.Sc.,
On Overseas Service.
 1.*F. W. DOUGLAS, B.A.Sc.
 7. H. C. EDWARDS, B.A.Sc.
 7.*H. F. ELLIOTT, B.A.Sc.
 1. J. A. ELLIOTT, B.A.Sc.
 2.*S. D. ELLIS, B.A.Sc.,
On Overseas Service.
 1.*H. E. EYRES, B.A.Sc.
 1.*O. M. FALLS, B.A.Sc.,
Empire Mfg. Co. London, Ont.
 7. D. G. FERGUSON, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1914—Continued.

1. G. O. FLEMING, B.A.Sc.,
On Overseas Service.
- 1.*J. L. FOREMAN, B.A.Sc.
- 7.*H. J. FRANKLIN, B.A.Sc., 72 Delaware Ave., Toronto, Ont.
- 5.*J. G. G. FROST, B.A.Sc., Welland, Ont.
Asst. Chemist, Metals-Chemical Co.
1. C. H. R. FULLER, B.A.Sc.,
On Overseas Service.
- 7.*E. I. GILL, B.A.Sc.
On Overseas Service.
- 2.*J. R. GILL, B.A.Sc., Sudbury, Ont.
1. R. W. GOUINLOCK, B.A.Sc.
On Overseas Service.
7. C. I. GRIERSON, B.A.Sc., Toronto, Ont.
With Imperial Oil Company.
- 3.*W. H. HALL, B.A.Sc.
- 3.*G. H. HALLY, B.A.Sc.,
On Overseas Service.
- 1.*J. J. HANNA, B.A.Sc.,
On Overseas Service.
1. J. H. HAWES, B.A.Sc.
- 1.*L. T. HAYMAN, B.A.Sc.
On Overseas Service.
- 1.*B. B. HOGARTH, B.A.Sc., Ottawa, Ont.
Water Power Branch.
4. E. E. H. HUGLI, B.A.Sc., Philadelphia, Pa.
- 1.*S. A. HUSTWITT, B.A.Sc., Homer, Ont.
Section 2, Welland Ship Canal.
- 7.*A. S. JANNATI, B.A.Sc., Toronto, Ont.
Winter & Joiner Co.
- 1.*R. P. JOHNSON, B.A.Sc., Toronto, Ont.
Welland Ship Canal.
- 7.*J. I. KAMMAN.
1. J. KAY, B.A.Sc.,
On Overseas Service.
4. N. G. KEEFER, B.A.Sc.
On Overseas Service.
3. H. S. KERBY, B.A.Sc.,
On Overseas Service.
3. J. A. KERR, B.A.Sc., Toronto, Ont.
Water Works Dept.
7. G. E. KEWIN, B.A.Sc., Toronto, Ont.
Canadian Inspection Co.
1. J. A. KNIGHT, B.A.Sc., Montreal, Que.
Foundation Co.
- 2.*S. A. LANG, B.A.Sc., Rancagua, Chili
With the Braden Copper Co.
- 7.*C. W. LATIMER, B.A.Sc.
- 1.*R. E. LINDSAY, B.A.Sc., Hamilton, Ont.
Rep. of Robt. W. Hunt Co., Ltd., at Hamilton Bridge Works.
7. N. H. LORIMER, B.A.Sc.,
On Overseas Service.
- 5.*O. G. LYE, B.A.Sc.,
On Overseas Service.
- 2.*W. A. MACDONALD, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1914—Continued.

- 2.*H. J. MACKENZIE, B.A.Sc.
 7.*A. M. MACKENZIE, B.A.Sc.
On Overseas Service.
 1. H. N. MACPHERSON, B.A.Sc.
 3. A. H. MACQUARRIE, B.A.Sc.
On Overseas Service.
 7. J. A. MARSHALL, B.A.Sc.
 1.*J. A. P. MARSHALL, B.A.Sc.,
On Overseas Service.
 7.*R. G. MATTHEWS, B.A.Sc. Toronto, Ont.
Toronto Hydro Electric.
 3.*H. W. MAXWELL, B.A.Sc.
 1.*R. C. McDONALD, B.A.Sc.
 1. S. B. MCGILL, B.A.Sc.
 7. D. L. McLAREN, B.A.Sc.
 1.*F. C. MECHIN, B.A.Sc. Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
 1. *W. G. MILLAR, B.A.Sc.,
On Overseas Service.
 1.*A. S. MILLER, B.A.Sc., Ingersoll, Ont.
Canadian Inspection Co.
 6.*W. E. MILLIGAN, B.A.Sc., Rancagua, Chili
With the Braden Copper Co.
 7.*P. H. MILLS, B.A.Sc.,
On Overseas Service.
 1.*J. S. MITCHELL, B.A.Sc.,
On Overseas Service.
 1. J. R. MONTAGUE, B.A.Sc., 633 Coristine Bldg., Montreal, Que.
With A. R. Henry, M.E.
 6. D. MORRISON, B.A.Sc.
 1. G. J. MULLINS, B.A.Sc., Toronto, Ont.
Harbour Commissioners.
 1.*E. P. MUNTZ, B.A.Sc., Port Weller, Ont.
Welland Ship Canal.
 7.*C. L. NICHOLSON, B.A.Sc.
 1.*J. B. NICHOLSON, B.A.Sc., Hamilton, Ont.
 1.*C. NOECKER, B.A.Sc. Berlin, Ont.
 1. J. A. OWENS, B.A.Sc., Toronto, Ont.
Curtiss Aeroplane Co.
 1. A. H. PARKER, B.A.Sc.,
On Overseas Service.
 1.*R. G. PATTERSON, B.A.Sc.
 7.*J. D. PEART, B.A.Sc.
 1. C. W. PENNINGTON, B.A.Sc., Dundas, Ont.
 1.*C. V. PERRY, B.A.Sc.,
On Overseas Service.
 5.*W. E. PHILLIPS, B.A.Sc.,
On Overseas Service.
 8. G. O. PHILP, B.A.Sc.
 1. P. H. RANEY, B.A.Sc. Toronto, Ont.
 1. R. H. RICE, B.A.Sc.
 7. A. S. ROBERTSON, B.A.Sc., Toronto, Ont.
With H.E.P.C.
 4.*J. M. ROBERTSON, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1914—Continued.

7. H. D. ROTHWELL, B.A.Sc. Toronto, Ont.
Hydro-Electric Power Com.
1. F. S. RUTHERFORD, B.A.Sc.,
On Overseas Service.
- 7.*F. M. SERVOS, B.A.Sc.
- 1.*H. L. SHEPPARD, B.A.Sc.
On Overseas Service.
1. N. E. D. SHEPPARD, B.A.Sc.
1. S. SHUPE, B.A.Sc., Dunnville, Ont.
Town Engineer.
6. A. W. SIME, B.A.Sc.
On Overseas Service.
- 1.*B. N. SIMPSON, B.A.Sc.
On Overseas Service.
1. C. E. SINCLAIR, B.A.Sc.
On Overseas Service.
- 1.*J. B. SKAITH, B.A.Sc. Toronto, Ont.
- 4.*W. C. SKINNER, B.A.Sc. Toronto, Ont.
1. H. M. SMITH, B.A.Sc. (deceased).
2. G. M. SMYTH, B.A.Sc.,
On Overseas Service.
- 1.*N. L. SOMERS, B.A.Sc.
7. R. O. STANDING, B.A.Sc.,
On Overseas Service.
- 7.*E. C. R. STONEMAN, B.A.Sc.
1. J. R. STROME, B.A.Sc. Calgary, Alta.
Irrigation Office, Dept. of Interior.
2. J. S. TAYLOR, B.A.Sc.,
On Overseas Service.
- 1.*C. N. TEMES, B.A.Sc.
- 3.*E. H. TENNENT, B.A.Sc.
1. J. A. TILSTON, B.A.Sc.,
On Overseas Service.
- 1.*G. E. TRELOAR, M.A.Sc., Toronto, Ont.
6. E. A. TWIDALE, B.A.Sc.
On Overseas Service.
- 1.*F. T. VAN DYKE, B.A.Sc., St. Catharines, Ont.
Section 1, Welland Ship Canal.
- 3.*M. F. VERITY, B.A.Sc.
On Overseas Service.
- 1.*H. O. WADDELL, B.A.Sc.
- 1.*H. W. WAGNER, B.A.Sc.
- 1.*H. D. M. WALLACE, B.A.Sc.,
On Overseas Service.
1. P. L. WHITLEY, B.A.Sc.
- 6.*A. E. WIGLE, B.A.Sc., Nobel, Ont.
Canadian Explosives Limited.
- 7.*J. A. H. WIGLE, B.A.Sc. Kingsville, Ont.
- 4.*A. C. WILSON, B.A.Sc., Toronto, Ont.
Fellow in Physics, University of Toronto.
1. H. P. WILSON, B.A.Sc., Toronto, Ont.
Canadian Inspection Co.
- 2.*R. W. YOUNG, B.A.Sc.

*Degree with honours.

1915

1. L. S. ADLARD, B.A.Sc.,
On Overseas Service.
1. A. C. ANDERSON, B.A.Sc.,
Toronto, Ont.
- 1.*G. A. ARKSEY, B.A.Sc.,
Creighton Mines, Ont.
2. R. M. ARTHUR, B.A.Sc.,
On Overseas Service.
1. F. D. AUSTIN, B.A.Sc.,
On Overseas Service.
- 7.*T. R. BANBURY, B.A.Sc.,
Canadian Inspection Co.
London, Ont.
7. V. A. BEACOCK, B.A.Sc.,
Toronto, Ont.
- 1.*P. BENNETT, B.A.Sc.,
Calgary, Alta.
- 7.*H. M. BLACK, B.A.Sc.,
Shell Dept., Universal Tool Steel Co.
Toronto, Ont.
- 6.*J. E. BREITHAUP, B.A.Sc.,
On Overseas Service.
- 1.*E. D. G. BROUSE, B.A.Sc.,
On Overseas Service.
- 1.*L. R. BROWN, B.A.Sc.,
229 Albert St., Sault Ste. Marie, Ont.
- 1.*F. M. BUCHANAN, B.A.Sc.,
With Dominion Tar and Chemical Co.
Sydney, N.S.
7. H. C. BUDD, B.A.Sc.,
C.G.E. Co.
Peterborough, Ont.
4. H. J. BURDEN, B.A.Sc.,
On Overseas Service.
1. F. N. D. CARMICHAEL, B.A.Sc.,
Canada Car Co.
Detroit, Mich.
- 4.*R. W. CATTO, B.A.Sc.,
On Overseas Service.
1. R. M. COCKBURN, B.A.Sc.,
On Overseas Service.
- 1.*J. D. COOK, B.A.Sc.,
With Massey Harris Co.
Toronto, Ont.
- 1.*A. B. CREALOCK, B.A.Sc.,
Canadian Inspection Co.
Toronto, Ont.
- 1.*W. R. DA COSTA, B.A.Sc.,
On Overseas Service.
1. N. H. DANIEL, B.A.Sc.,
On Overseas Service.
- 3.*C. G. DAVEY, B.A.Sc.,
Canadian Inspection Co.
London, Ont.
- 7.*G. P. DAVIDSON, B.A.Sc.,
On Overseas Service.
4. J. J. DAVIDSON, B.A.Sc.,
Toronto, Ont.
7. W. A. DEAN, B.A.Sc.,
On Overseas Service.
- 1.*E. V. DEVERALL, B.A.Sc.,
Dominion Bridge Co.
Toronto, Ont.
- 7.*J. DIBBLEE, B.A.Sc.,
Demonstrator in Mechanical Engineering, University of Toronto.
Toronto, Ont.
- 1.*W. L. DICKSON, B.A.Sc.,
Canadian Inspection Co.
St. Catharines, Ont.

*Degree with honours.

1915—Continued.

- 1.*G. A. DOWNEY, B.A.Sc.,
On Overseas Service.
- 7.*R. V. ELLIOTT, B.A.Sc.,
Canadian Inspection Co. Brantford, Ont.
2. E. R. EMMERSON, B.A.Sc., Port Arthur, Ont.
1. A. C. EVANS, B.A.Sc., Oakville, Ont.
1. H. S. FALCONER, B.A.Sc., Shelburne, Ont.
7. D. T. FLANNERY, B.A.Sc., North Bay, Ont.
1. J. W. H. FORD, B.A.Sc., London, Ont.
- 1.*W. R. FRASER, B.A.Sc., Brantford, Ont.
1. W. G. FRENCH, B.A.Sc.,
On Overseas Service.
- 1.*W. J. FULTON, B.A.Sc.,
G. S. Abrey, O.L.S. Toronto, Ont.
1. R. D. GALBRAITH, B.A.Sc.,
On Overseas Service.
1. C. N. GEALE, B.A.Sc.,
On Overseas Service.
6. L. G. GLASS, B.A.Sc., London, Ont.
1. G. A. GOODERHAM, B.A.Sc.,
On Overseas Service.
- 7.*W. H. R. GOULD, B.A.Sc., Uxbridge, Ont.
- 4.*T. S. GRAHAM, B.A.Sc.,
On Overseas Service.
- 1.*E. R. GRANGE, B.A.Sc.,
On Overseas Service.
7. G. D. GRAY, B.A.Sc.,
Union Carbide Co. Welland, Ont.
3. J. GRAY, B.A.Sc., Victoria, B.C.
7. G. E. GRIFFITHS, B.A.Sc., Thorold, Ont.
2. M. S. HAAS, B.A.Sc.,
On Overseas Service.
2. D. S. HALFORD, B.A.Sc.,
Consolidated Arizona Smelting Co. Humboldt, Ariz.
- 2.*W. T. HALL, B.A.Sc.,
Braden Copper Co. Rancagua, Chili
- 2.*J. E. HANLON, B.A.Sc.,
Hollinger Mine. Timmins, Ont.
1. C. HAYWARD, B.A.Sc.,
Aird, Murray & Rose. Mimico, Ont.
- 2.*L. T. HIGGINS, B.A.Sc.,
Braden Copper Co. Rancagua, Chili
- 1.*C. E. HOGARTH, B.A.Sc.,
Welland Ship Canal. Port Weller, Ont.
7. T. P. IRELAND, B.A.Sc.,
Canadian Inspection Co. Hamilton, Ont.
- 7.*G. A. IRONSIDE, B.A.Sc.,
On Overseas Service.
- 1.*C. W. H. JACKSON, B.A.Sc., Coboconk, Ont.
7. K. A. JEFFERSON, B.A.Sc.,
Canadian Inspection Co. St. Catharines, Ont.
- 1.*G. W. F. JOHNSTON, B.A.Sc., Ottawa, Ont.
7. C. M. JONES, B.A.Sc., Toronto, Ont.
1. E. H. JUPP, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1915—Continued.

7. C. R. KEYS, B.A.Sc.,
Curtiss Aeroplane Co. Toronto, Ont.
- 5.*H. KOHL, B.A.Sc.,
Standard Chemical Co. Longford, Ont.
- 1.*R. E. LAIDLAW, B.A.Sc.,
With M. C. R. Detroit, Mich.
- 1.*G. J. LAMB, B.A.Sc., Walkerton, Ont.
- 7.*G. W. LAWRENCE, B.A.Sc.,
On Overseas Service.
- 1.*H. O. LEACH, B.A.Sc., Toronto, Ont.
- 3.*R. H. LLOYD, B.A.Sc., Wingham, Ont.
1. W. E. LOCKHART, B.A.Sc.,
On Overseas Service.
- 1.*W. E. LONGWORTHY, B.A.Sc., Regina, Sask.
- 1.*C. T. LOUNT, B.A.Sc., Regina, Sask.
- 1.*R. G. LYE, B.A.Sc.,
With Buffalo Copper and Brass Rolling Co. Buffalo, N.Y.
- 1.*C. A. MACDONALD, B.A.Sc., Ridgetown, Ont.
2. I. M. MACDONELL, B.A.Sc.,
On Overseas Service.
- 1.*H. E. MACPHERSON, B.A.Sc., St. Thomas, Ont.
- 1.*W. R. McCAFFREY, B.A.Sc.,
On Overseas Service.
- 1.*C. R. McCORT, B.A.Sc.,
Dept. of Interior. Montreal, Que.
1. K. D. McDONALD, B.A.Sc.,
On Overseas Service.
- 1.*J. P. McDONALD, B.A.Sc., Brantford, Ont.
- 3.*W. R. McGIE, B.A.Sc.,
With Ford Motor Car Co. Walkerville, Ont.
- 1.*D. F. MCGUGAN, B.A.Sc., Mt. Brydges, Ont.
7. J. S. MCINTYRE, B.A.Sc.,
With H.E.P.C. Toronto, Ont.
1. E. V. McKAGUE, B.A.Sc.,
On Overseas Service.
7. E. T. MARTIN, B.A.Sc., Waddington, N.Y.
- 1.*W. H. MEITZ, B.A.Sc.,
Albert Albrecht Co. Detroit, Mich.
- 1.*G. MITCHELL, B.A.Sc.,
On Overseas Service.
1. J. T. MOGAN, B.A.Sc.,
With Buffalo Copper and Brass Rolling Co. Buffalo, N.Y.
- 7.*E. M. MONTEITH, B.A.Sc.,
On Overseas Service.
- 4.*A. MORRIS, B.A.Sc.,
With Shepard & Calvin. Toronto, Ont.
1. B. M. MORRIS, B.A.Sc.,
On Overseas Service.
- 5.*W. D. MORRIS, B.A.Sc.,
Upper Canada College. Toronto, Ont.
2. J. M. MUIR, B.A.Sc.,
On Overseas Service.
- 1.*M. A. NEILSON, B.A.Sc., Toronto, Ont.
- 1.*H. S. NICKLIN, B.A.Sc., Acton, Ont.
1. E. B. O'CONNOR, B.A.Sc., Toronto, Ont.

*Degree with honours.

1915—Continued.

1. W. M. OMAND, B.A.Sc., Regina, Sask.
- 1.*R. A. PAUL, B.A.Sc., Listowel, Ont.
- 3.*A. N. PAYNE, B.A.Sc., Toronto, Ont.
1. L. P. PEARCE, B.A.Sc. Yorkton, Sask.
- 1.*H. M. PECK, B.A.Sc., Toronto, Ont.
1. S. M. PETERKIN, B.A.Sc.,
On Overseas Service.
- 1.*C. F. PORTER, B.A.Sc., Windsor, Ont.
- 1.*J. E. PORTER, B.A.Sc., Wingham, Ont.
2. W. D. POWELL, B.A.Sc.
On Overseas Service.
1. W. E. RALEY, B.A.Sc.,
On Overseas Service.
1. C. C. RANCE, B.A.Sc., Toronto, Ont.
- 1.*G. RANKIN, B.A.Sc., Detroit, Mich.
Canadian Inspection Co.
1. W. B. REDMAN, B.A.Sc.,
On Overseas Service.
6. P. J. RELYEA, B.A.Sc., Toronto, Ont.
Harris Abattoir Co.
- 1.*A. A. RICHARDSON, B.A.Sc.
On Overseas Service.
- 3.*A. S. ROBERTSON, B.A.Sc., Walkerton, Ont.
1. J. T. ROSE, B.A.Sc.
On Overseas Service.
- 7.*A. C. ROSS, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
- 1.*H. M. ROWE, B.A.Sc.,
On Overseas Service.
4. G. W. RUTTER, B.A.Sc.,
On Overseas Service.
- 7.*E. W. SAVAGE, B.A.Sc., Ottawa, Ont.
With Dominion Government.
7. A. G. SCOTT, B.A.Sc.,
On Overseas Service.
- 1.*E. H. SCOTT, B.A.Sc.,
On Overseas Service.
- 1.*R. G. SCOTT, B.A.Sc.,
On Overseas Service.
7. N. F. SEYMOUR, B.A.Sc., Hamilton, Ont.
Canadian Inspection Co.
- 1.*J. H. SHAW, B.A.Sc., Toronto, Ont.
1. J. S. SHEEHY, B.A.Sc., Buffalo, N.Y.
With Buffalo Copper and Brass Rolling Co.
3. W. G. SHIER, B.A.Sc.,
On Overseas Service.
- 1.*C. N. SIMPSON, B.A.Sc., Toronto, Ont.
1. R. B. SINCLAIR, B.A.Sc.,
On Overseas Service.
- 7.*W. A. STEEL, B.A.Sc.,
On Overseas Service.
2. J. B. STITT, B.A.Sc., Rancagua, Chili
Braden Copper Co.
3. J. D. STONE, B.A.Sc., Chatham, Ont.

*Degree with honours.

1915—Continued.

7.*G. C. STOREY, B.A.Sc., <i>Electrician, McCormick Mfg. Co.</i>	London, Ont.
7.*A. N. SUHLER, B.A.Sc.,	Pt. Edward, Ont.
7. A. N. TAYLOR, B.A.Sc., <i>Canadian Inspection Co.</i>	Toronto, Ont.
1. L. B. TILLSON, B.A.Sc., <i>On Overseas Service.</i>	
1. J. A. TOM, B.A.Sc., <i>On Overseas Service.</i>	
5.*W. UFFELMANN, B.A.Sc., <i>Canadian Consolidated Rubber Co.</i>	Montreal, Que.
1. L. P. VEZINA, B.A.Sc.,	Chicoutimi, Que.
7.*A. L. WARD, B.A.Sc. <i>On Overseas Service.</i>	
1.*F. E. WEIR, B.A.Sc.	Burford, Ont.
1.*C. W. WEST, B.A.Sc. <i>On Overseas Service.</i>	
1. J. N. WILLIAMS, B.A.Sc., <i>On Overseas Service.</i>	
1.*J. C. WILSON, B.A.Sc.,	Wingham, Ont.
1.*H. A. WOOD, B.A.Sc. <i>On Overseas Service.</i>	
7. H. K. WYMAN, B.A.Sc., <i>On Overseas Service.</i>	

* Degree with honours.

CERTIFICATES.

MINERALOGY AND ASSAYING.

1896. G. JOHNSTON.
1897. E. B. WEBSTER.
1901. G. A. HUNT.

ELECTRICITY.

1896. A. T. TYE, c/o Empresa Hanseatica, Barranquilla, Columbia, South
America.
1898. A. N. McMILLAN, Penetanguishene, Ont.
1900. A. H. SMITH.
1896. E. I. SIFTON, London, Ont.
Manager, London Electric Construction Co.
1903. W. ELWELL (deceased).

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A

Abendana, E. M.....	1914	Anderson, A. S.....	1913
Acres, H. G.....	1903	Andrews, E.....	1897
Adams, J. H.....	1910	Andrews, F. C. (deceased)....	1914
Adams, O. F.....	1910	Angus, H. H.....	1903
Adlard, L. S.....	1915	Angus, R. W.....	1894
Adsett, F. C.....	1914	Apsey, J. F.....	1888
Aitken, J.	1911	Archer, E. G.....	1911
Akers, H. G.....	1908	Ardagh, A. G.....	1893
Alexander, J. H.....	1904	Ardagh, E. G. R.....	1900
Alison, T. H.....	1892	Arens, A. H.....	1906
Alison, J. G. R.....	1903	Arens, H. W. (deceased).	1905
Allan, J. R.....	1892	Arens, R. J.	1908
Allan, J. L.....	1900	Arens, E. G.....	1909
Allan, L. F.....	1908	Arksey, G. A.....	1915
Allan, L. B.....	1911	Armer, C. E.....	1914
Allen, F. G.....	1907	Armer, J. C.....	1906
Allen, R. J.....	1913	Armour, R. H.....	1905
Allison, C. B.....	1908	Armstrong, J.....	1895
Alport, F.....	1906	Armstrong, H. V.....	1906
Alton, J. L.....	1914	Arthur, R. M.....	1915
Amos, W. L.....	1906	Ashbridge, W. T.....	1888
Amsden, W. G.....	1910	Augustine, A. P.....	1907
Anderson, A. C.....	1915	Austin, E. T.....	1909
Anderson, A. G.....	1892	Austin, F. D.....	1915
Anderson, F. J.....	1907	Avery, C. R.....	1913
Anderson, R. M.....	1908	Aylesworth, C. B.....	1905

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Badgley, L. A.....	1911	Barnett, H. A.....	1910
Bain, J. A.....	1900	Barrett, R. H. (deceased).	1901
Bain, J. W.....	1896	Barrett, J. H.	1904
Baird, J. A.....	1910	Barry, W. H.....	1909
Baird, W. J.....	1910	Bartlett, E.....	1908
Baker, M. H.....	1906	Bartley, T. H.....	1911
Baldwin, F. W.....	1906	Bates, M. (deceased).	1906
Baldwin, L. C. M.....	1913	Batten, H. L.....	1911
Ball, E. F.....	1888	Beacock, V. A.....	1915
Ballantyne, H. F.....	1893	Beatty, F. W.....	1913
Banbury, T. R.....	1915	Beatty, W. B.	1913
Banks, H. R.....	1914	Beatty, H. J.....	1891
Banting, E. W.....	1906	Beatty, W. G.....	1901
Barber, H. G.....	1902	Beatty, J. A.....	1903
Barber, T.....	1899	Beauregard, A. T.....	1894
Barber, W.....	1905	Beckstedt, R.D.S.....	1909
Barber, F.....	1906	Bedard, E. L.....	1914
Barber, H. C.....	1908	Bedard, H. J.....	1914
Barker, H. F.....	1894	Bedford, F. J. (deceased)	1908
Barley, J. H.....	1900	Begg, W. A.....	1905

Beith, R. E.....	1909	Brady, W. S.....	1907
Belcher, J. T.....	1914	Brandon, E. T. J.....	1901
Bell, C. A.....	1913	Brandon, H. E.....	1906
Bell, G. G.....	1905-1908	Bray, L. T.....	1900
Bellisle, J. P. (deceased).....	1906	Brebner, G. (deceased).....	1895
Bennett, G. A.....	1909	Brecken, P. R.....	1908
Bennett, S. G.....	1914	Breithaupt, J. E.....	1915
Bennett, P.....	1915	Brereton, L. R.....	1913
Bergey, A. E.....	1894	Brereton, W. P.....	1901
Berkeley, G. L.....	1911	Breslove, J.....	1903
Berry, E. W.....	1910	Brian, M. E.....	1906
Bertram, G. M.....	1910	Bristol, W. M.....	1905
Betts, H. H.....	1906	Broadfoot, F. C.....	1906
Beynon, D. E.....	1906	Brock, A. F.....	1910
Billings, J. H.....	1911	Brock, W. M.....	1911
Bingham, H. C.....	1910	Brodie, W. M.....	1895
Binns, P. V.....	1914	Broughton, G. H.....	1907
Birchard, E. R.....	1909	Broughton, J. T.....	1902
Bissett, D. G.....	1910	Brouse, E. D. G.....	1915
Bissett, G. W.....	1906	Brouse, W. H. D.....	1911
Bissett, J. R.....	1911	Brown, C. E.....	1909
Black, B. S.....	1913	Brown, H. H.....	1914
Black, G. E.....	1908	Brown, J. M.....	1902
Black, H. M.....	1915	Brown, T. W.....	1906
Black, W. D.....	1909	Brown, D. B.....	1888
Blackwell, R. H. H.....	1910-1915	Brown, G. L.....	1893
Blackwood, A. E.....	1895	Brown, L. L.....	1895
Blackwood, W. C.....	1906	Brown, L. R.....	1915
Blain, D.....	1913	Brown, T. D.....	1904
Blair, W. J.....	1902	Brown, J. A.....	1907
Bleakley, J. F.....	1885	Brown, E. I.....	1908
Blizard, D. C.....	1909	Brown, H.....	1911
Blyth, J. M.....	1914	Brown, W. D.....	1914
Boeckh, J. C.....	1906	Browne, E. W.....	1909
Bonham, A. R.....	1914	Browne, M. O.....	1910
Bonnell, M. B.....	1904	Bryce, W. F. M.....	1908
Bonter, E. R.....	1913	Buchan, P. H.....	1908
Boswell, E. J.....	1895	Buchanan, F. M.....	1915
Boswell, M. C.....	1900	Buchanan, J. A.....	1909
Boswell, W. A.....	1911	Buchanan, T. R.....	1913
Boulton, W. J.....	1909	Buchanan, W. B.....	1913
Boustead, W. E. (deceased).....	1890	Bucke, M. A. (deceased).....	1890
Bow, J. A.....	1897	Bucke, W. A.....	1894
Bowen, G. H.....	1909	Budd, H. C.....	1915
Bower, J. H. W.....	1914	Bunnell, A. E. K.....	1906
Bowers, W. J. (deceased).....	1901	Burd, J. H.....	1903
Bowes, H. F.....	1908	Burden, H. J.....	1915
Bowman, E. P.....	1910	Burgess, E. L.....	1903
Bowman, H. J.....	1885	Burgess, J. R.....	1910
Bowman, H. D.....	1907	Burley, R. J.....	1904
Bowman, F. M.....	1890	Burns, D.....	1883
Bowman, A. M.....	1886	Burns, J. C. (deceased).....	1887
Bowman, F.....	1911	Burns, J. E.....	1909
Boyd, D. G.....	1894	Burnham, F. W.....	1904
Boyd, W. H.....	1898	Burnham, N. G. H. (deceased).....	1910
Brace, J. H.....	1908	Burnside, J. T. M.....	1899
Brackinreid, T. W.....	1911	Burrows, B. H. A.....	1913

Burwash, L. T.....	1896	Bush, C. E.....	1907
Burwash, N. A.....	1903	Byam, F. M.....	1906

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Cain, E. T.....	1911	Chalmers, J.....	1894
Calder, J. W.....	1904	Chambers, E. V.....	1914
Caldwell, W. B.....	1913	Chandler, R. B.....	1911
Cale, W. C.....	1910	Charlesworth, L. C.....	1893
Cameron, N. C.....	1904	Charlton, H. W.....	1897
Cameron, A.....	1906	Chase, A. V.....	1905
Cameron, M. G.....	1909	Cherry, P. G.....	1911
Cameron, C. S.....	1911	Chesnut, A. W.....	1910
Cameron, O. L.....	1913	Chesnut, E. F.....	1911
Campbell, A. D.....	1910	Chesnut, F. H.....	1908
Campbell, A. J.....	1904	Chesnut, V. S.....	1909
Campbell, A. M.....	1904	Chewett, H. J.....	1888
Campbell, D. H.....	1914	Chilver, C. A.....	1904
Campbell, H. M.....	1914	Chilver, H. L.....	1904
Campbell, J. J.....	1914	Chisholm, D. C.....	1910
Campbell, W. G.....	1902	Christie, W.....	1902
Campbell, A. R. (deceased)...	1902	Christie, U. W.....	1904
Campbell, R. J.....	1895	Christie, A. G.....	1901
Campbell, G. M.....	1896	Christie, R. M.....	1914
Campbell, L. L.....	1913	Chubbuck, L. B.....	1899
Campbell, W. C.....	1905	Clark, H.....	1913
Campbell, N. A.....	1908	Clark, J.....	1900
Campbell, R. A.....	1909	Clark, G. T.....	1906
Campbell, A. W.....	1906	Clark, F. W.....	1911
Campbell, J. E.....	1908	Clark, H. J.....	1911
Campbell, C. D.....	1911	Clarke, F. F.....	1903
Candee, C. N.....	1914	Clarkson, G. E.....	1913
Canniff, C. M.....	1888	Claveau, J. A.....	1910
Carey, B.....	1889	Cleary, F. S. (deceased).....	1911
Carlyle, R. T.....	1914	Clegg, B. D.....	1913
Carlyle, W. M.....	1910	Clement, W. A.....	1889
Carmichael, C. G. (deceased)...	1902	Clement, S. R. A.....	1905
Carmichael, F. N. D.....	1915	Cline, C. G.....	1909
Carmichael, R. M.....	1913	Clipsham, K. M.....	1914
Carpenter, H. S.....	1897	Clothier, G. A.....	1899
Carrie, G. M.....	1913	Coates, P. C.....	1904
Carroll, A. M.....	1908	Cockburn, J. R.....	1901
Carroll, M. J.....	1906	Cockburn, L. S.....	1910
Carscallen, H. R.....	1908	Cockburn, R. M.....	1915
Carson, W. R.....	1905	Code, A. G.....	1910
Carter, J. M.....	1914	Code, S. B.....	1904
Carter, W. E. H.....	1898	Code, T. F. (deceased).....	1904
Caster, J. H.....	1907	Cole, D. B.....	1911
Catto, R. W.....	1915	Cole, W. E. (deceased).....	1908
Caudwell, N. S.....	1910	Cole, C. R.....	1910
Cavell, E.....	1907	Coleman, J. H.....	1913
Chace, W. G.....	1901	Colhoun, G. A.....	1906
Chadwick, R. E. C.....	1906	Collett, W. C.....	1908
Chadwick, W. W.....	1911	Collinson, J. G.....	1909
Challen, G.....	1908	Colquhoun, G. A.....	1910
Challies, J. B.....	1904	Coltham, G. W.....	1909
Chalmers, W. J.....	1889	Conlon, F. T.....	1902

Connell, C. B. B.....	1907	Craig, S. E.....	1904
Connor, H. V.....	1902	Crashley, J. W.....	1914
Connor, A. W.....	1895	Crawford, A. W.....	1914
Cooch, H. A.....	1909	Crealock, A. B.....	1915
Cook, A. S.....	1911	Creighton, A. G.....	1906
Cook, G. M.....	1913	Crerar, S. R.....	1904
Cook, J. D.....	1915	Crosby, N. L. R.....	1905
Cook, W. A. Mc.....	1906	Crosby, T. H.....	1909
Coon, B. R.....	1913	Crouch, M. E.....	1911
Cooper, C.....	1899	Cruthers, W. M.....	1911
Corman, W. E.....	1909	Culbert, M. T. (deceased)....	1902
Cornell, C. W.....	1911	Culbert, J. V.....	1907
Corrigan, G. D. (deceased)....	1890	Cumming, R.....	1902
Corrigan, T. E.....	1905	Cumming, J. D.....	1908
Cory, R. Y.....	1908	Cummins, O. F.....	1911
Coulson, C. L.....	1903	Cunerty, T. J.....	1911
Cousins, E. L.....	1906	Cunningham, C. H.....	1911
Coulthard, R. M.....	1899	Cunningham, R. H.....	1909
Cowan, W. A.....	1904	Currie, W. M.....	1904
Cowper, G. C.....	1907	Curtis, W. T.....	1913
Coyne, H.....	1908	Curzon, J. H.....	1911
Craig, J. A.....	1899	Cuthbertson, W.....	1914
Craig, J. H.....	1910		

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Da Costa, W. R.....	1915	Delahaye, W. H.....	1909
Dahl, A. D.....	1908	Delamere, R. D.....	1914
Dallyn, F. A.....	1909	De Laporte, A. V.....	1910
D'Alton, F. K.....	1911	Depew, H. H.....	1904
Dalton, G. F.....	1914	Derham, W. P.....	1909
Daniel, N. H.....	1915	Deverall, E. V.....	1915
Daniels, W. N.....	1906	Diamond, R. W.....	1913
Danks, F. A.....	1908	Dibblee, J.....	1915
Danks, C. N.....	1909	Dickinson, E. D.....	1900
Dann, E. M.....	1909	Dickson, G. W.....	1900
Darling, E. H.....	1898	Dickson, W. L.....	1915
Darroch, J.....	1908	Dill, C. W.....	1891
Dashwood, R.....	1914	Dixon, H. A.....	1900
Dates, A. J.....	1913	Dobbin, R. L.....	1910
Davey, C. G.....	1915	Dobie, J. S.....	1895
Davidson, R. D.....	1914	Dobson, W. P.....	1910
Davidson, G. P.....	1915	Dodds, W. A.....	1909
Davidson, J. J.....	1915	Doorly, H. C. (deceased)	1908
Davis, R.....	1907	Douglas, F. W.....	1914
Davis, A. I.....	1909	Douglas, R. H.....	1908, 1909
Davis, H. W.....	1909	Douglas, W. E.....	1902
Davis, H. C.....	1909	Downey, G. A.....	1915
Davis, W. B.....	1911	Downing, F. H.....	1911
Davison, J. E.....	1900	Duff, J. A. (deceased).....	1890
Davison, A. E.....	1903	Duff, W. A.....	1901
Dawson, I. H.....	1909	Duggan, G. H.....	1883
Deacon, T. R.....	1891	Dunbar, W. B.....	1911
Dean, C. D.....	1910	Duncan, J. M.....	1910
Dean, W. A.....	1915	Duncan, W. G.....	1913
Death, N. P. F.....	1909	Dundass, C. S.....	1906
DeCew, J. A.....	1896	Dunlop, R. J.....	1902
De Guerre, F. C.....	1911	Dunn, T. H.....	1893
Deitch, E. L.....	1913	Dyer, F. C.....	1908

E

Eagleson, F. M.....	1908	Ellis, S. D.....	1914
Eason, D. E.....	1901	Elwell, W. (deceased).....	1902
Eckert, C. H.....	1911	Emery, V. H.....	1910
Edwards, W. M.....	1902	Emmerson, E. R.....	1915
Edwards, C.....	1908	Empey, J. M.....	1902
Edwards, H. C.....	1914	English, A. B. (deceased).....	1890
Elder, A. J.....	1904	Evans, A. C.....	1915
Elliot, J. A.....	1911	Evans, S. D.....	1907
Elliot, R. V.....	1915	Evans, S. L.....	1908
Elliott, J. A.....	1914	Evans, W. J.....	1910
Elliott, G. R.....	1911	Ewart, J. A.....	1894
Elliott, C. F.....	1911	Ewart, F. R.....	1907
Elliott, H. F.....	1914	Ewing, E. O.....	1908
Elliott, H. P.....	1896	Eyres, H. E.....	1914
Elliott, J. C.....	1899		

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Fairbairn, J. M. R.....	1893	Follett, R. C.....	1910
Fairchild, C.....	1892	Foot, F. F.....	1913
Fairlie, H. W.....	1910	Forbes, D. L. H.....	1902
Falconer, F. S.....	1909	Ford, A. L.....	1904
Falconer, H. S.....	1915	Ford, J. W. H.....	1915
Falls, O. M.....	1914	Foreman, J. L.....	1914
Fargey, T. A.....	1909	Foreman, J. M.....	1910
Farrell, K. A.....	1911	Forman, W. E.....	1899
Farrelly, T. J.....	1911	Forrester, C.....	1893
Fear, S. L.....	1906	Forward, E. A.....	1897
Fensom, C. J.....	1903	Forward, C. C.....	1906
Ferguson, C. R.....	1910	Foster, A. H.....	1908
Ferguson, D. G.....	1914	Foster, W. J.....	1910
Ferguson, G. H.....	1905	Foulds, W. C.....	1910
Ferguson, J. B.....	1909	Francis, Walter J.....	1893
Ferguson, J. W.....	1910	Francis, G. C.....	1908
Fergusson, A. T.....	1909	Frankel, E. L.....	1911
Fierheller, H. S. (deceased).....	1905	Franklin, H. J.....	1914
Fingland, W.....	1893	Fraser, A.....	1910
Fiddes, F. R.....	1913	Fraser, W. R.....	1915
Fisken, J. B. K.....	1910	Fredin, J.....	1910
Flanagan, O. L.....	1908	Freeland, E. E.....	1911
Flannery, D. T.....	1915	Freeman, T. E.....	1909
Fleck, J. G.....	1904	Freeman, J. R.....	1911
Fleming, D. H.....	1913	French, W. G.....	1915
Fleming, G. O.....	1914	Frid, H. P.....	1911-1915
Fleming, G. R. S.....	1907	Frost, E. R.....	1909
Fletcher, A. W.....	1910	Frost, J. G. G.....	1914
Fletcher, F. T.....	1910	Fuce, E. O.....	1903
Fletcher, J. A.....	1910	Fuller, C. H. R.....	1914
Flint, C.....	1908	Fuller, R. J.....	1911
Flint, T. R. C.....	1910	Fullerton, C. H.....	1900
Flook, S. E.....	1911	Fulton, W. J.....	1915
Flynn, C. C.....	1911	Fux, P. C.....	1907

G

Gaby, F. A.....	1903	Galbraith, R. D.....	1915
Gagne, S. (deceased).....	1901	Gall, H.....	1910
Galbraith, J. S.....	1913	Galletly, J. S.....	1907

Galt, G.	1907	Graham, C. W.	1906
Gardner, J. C.	1903	Graham, E. B.	1910
Garland, M. L.	1890	Graham, G. W.	1907
Garrow, A. B.	1907	Graham, D. A.	1909
Geale, C. N.	1915	Graham, T. S.	1915
Gear, S. S.	1908	Grange, E. R.	1915
George, R. E.	1903	Grant, W. F.	1898
Gibbons, J.	1888	Grant, R. R.	1909
Gibson, A. E.	1902	Grasett, C. S.	1907
Gibson, J. M.	1910	Grassie, C. A.	1908
Gibson, M. M.	1910	Gray, A.	1904
Gibson, N. R.	1901	Gray, A. G.	1913
Gibson, W. S.	1904	Gray, A. T.	1897
Gill, E. I.	1914	Gray, A. J.	1913
Gill, J. R.	1914	Gray, E. R.	1913
Gillespie, P.	1903	Gray, G. D.	1915
Gillies, A.	1907	Gray, J.	1915
Glass, L. G.	1915	Gray, J. E.	1909
Glover, A. E.	1909	Gray, W. W.	1904
Goad, V. A. E.	1910	Green, R. E.	1911
Goldie, A. R.	1893	Greene, E. A.	1911
Goodall, J. N.	1904	Greene, G. E. D.	1909
Gooderham, A. E.	1909	Greene, P. W.	1906
Gooderham, G. A.	1915	Greene, R. L.	1910
Gooderham, J. L.	1911	Greene, W. H.	1909
Goodeve, V. S.	1910	Greenwood, W. K.	1904
Goodman, H. M.	1913	Grierson, C. I.	1914
Goodwin, A. C.	1902	Griffiths, G. E.	1915
Goodwin, J. B.	1892	Guernsey, F. W.	1895
Gordon, J. P.	1904	Gulley, C. L.	1908
Gordon, W. A.	1910	Gunn, W. W.	1909
Gouinlock, R. W.	1914	Gurney, W. C.	1896
Gould, W. H. R.	1915	Guest, W. S.	1900
Gourlay, V. F.	1910	Guy, E.	1899
Gourlay, W. A.	1903		

H

Haas, M. S.	1915	Hanning, G. F.	1889
Hackner, J. W.	1908	Hara, L. D.	1904
Hadcock, J. P.	1913	Harcourt, F. Y.	1903
Hagarty, R. E. W.	1907	Hare, R. A.	1907
Haight, H. V.	1896	Hare, W. A.	1899
Halford, D. S.	1915	Harkness, A. H.	1895
Hall, H. G.	1911	Harkness, A. L.	1906
Hall, K.	1907	Harper, C. J.	1909
Hall, W. H.	1914	Harris, C. J.	1904
Hall, W. T.	1915	Harris, J. H.	1910
Hally, G. H.	1914	Harris, H. C.	1913
Hamer, A. T. E.	1901	Harrison, R. L.	1906
Hamilton, J. F.	1903	Harrison, F. W.	1905
Hamilton, C. B.	1906	Harrison, E.	1906
Hamilton, C. T.	1907	Hartney, J. C.	1906
Hamilton, G. M.	1911	Harvey, C.	1901
Hanes, G. S.	1903	Harvey, D. W.	1909
Hanley, S. C.	1893	Harvie, N. J.	1910
Hanlon, J. E.	1915	Haultain, H. E. T.	1889
Hanna, J. J.	1914	Haviland, F. L.	1908

Hawes, J. H.....	1914	Hill, T. A.....	1913
Hawley, H. A.....	1913	Hillis, C. R.....	1906
Hay, C. O.....	1909	Hogarth, B. B.....	1914
Hayes, L. J.....	1903	Hogarth, C. E.....	1915
Hayman, L. T.....	1914	Hogarth, G.....	1909
Hayward, C.....	1915	Hogg, T. H.....	1907
Hearn, R. L.....	1913	Holcroft, H. S.....	1900
Heebner, M. B.....	1911	Holden, O.....	1913
Heinonen, H. J.....	1913	Holmes, A. E.....	1909
Helliwell, J. G. (deceased)...	1910	Holmes, C. R.....	1909
Helson, F. I.....	1901	Hookway, C. W.....	1906
Hemphill, W.....	1900	Hoover, O. H.....	1910
Hemphill, J.....	1909	Hopkins, P. E.....	1910
Henderson, E. E.....	1885	Hopkins, R. H.....	1906
Henderson, F. D.....	1903	Horton, J. A.....	1903
Henderson, J. F.....	1910	Hoshal, G. C.....	1909
Henderson, S. E. M.....	1900	Houston, R. S.....	1906
Henderson, C. D.....	1908	Howard, J. T.....	1913
Hendry, M. C.....	1905	Howlett, T. F.....	1913
Henry, J. A.....	1900	Huber, W.....	1906
Henry, R. A.....	1913	Huether, D. J.....	1908
Henwood, C.....	1902	Huether, A. D.....	1908
Herald, W. J.....	1894	Huff, A. J.....	1911
Hermon, E. B.....	1886	Huffman, K.....	1911
Heron, J. B.....	1904	Hughes, C. (deceased).....	1909
Hertzberg, C. S. L.....	1905	Hugli, E. E. H.....	1914
Hertzberg, H. F. H.....	1907	Hull, H. S.....	1895
Hett, S.....	1906	Hull, A. H.....	1906
Hewson, E. G.....	1908	Hunter, A. E. (deceased).....	1909
Hewson, W. G.....	1905	Hunter, A. N.....	1908
Hickling, F. G.....	1910	Hustwitt, S. A.....	1914
Hicks, W. A. B.....	1897	Hutcheon, J.....	1890
Higgins, L. T.....	1915	Hutton, C. H.....	1907
Hill, E. M. M.....	1904	Hyatt, H.....	1911
Hill, S. N.....	1904	Hyland, H. M.....	1907
Hill, H. O.....	1907	Hyman, E. W.....	1907
Hill, H. R.....	1911		

I

Iler, S. B.....	1908	Ironside, G. A.....	1915
Ingles, C. J.....	1904	Irvine, J.....	1889
Innes, W. L.....	1890	Irwin, H.....	1909
Ireland, L. G.....	1907	Irwin, W. J.....	1910
Ireland, T. P.....	1915	Isbister, J.....	1909
Ireson, E. T.....	1913		

J

Jackes, F. P.....	1909	James, F. L.....	1910
Jackson, C. W. H.....	1915	James, O. S.....	1891
Jackson, J. G.....	1903	Jannati, A. S.....	1914
Jackson, F. C.....	1901	Jarvis, R. H.....	1911
Jackson, W.....	1907	Jefferson, K. A.....	1915
Jackson, C. B.....	1907	Jeffrey, D.....	1882
Jackson, J. E.....	1909	Jepson, W. C.....	1906
James, E. W.....	1909	Jermyn, P. V.....	1904
James, D. D.....	1889	Job, H. E.....	1894
James, E. A.....	1904	Johnson, C. C.....	1990

Johnson, R. P.....	1914	Johnston, C.....	1906
Johnston, D. M.....	1902	Johnston, C. E.....	1909
Johnston, G. W. F.....	1915	Johnston, J. T.....	1908
Johnston, H.....	1903	Jones, C. M.....	1915
Johnston, H. C.....	1910	Jones, J. E.....	1894
Johnston, A. C.....	1894	Jones, L. E.....	1911
Johnston, S. M.....	1894	Jones, G. S.....	1905
Johnston, H. A.....	1900	Jones, G. R.....	1906
Johnston, J. C.....	1900	Jones, T.....	1906
Johnston, J. A.....	1900	Jupp, A. E.....	1906
Johnston, C. K.....	1903	Jupp, E. H.....	1915
Johnston, R. H.....	1910	Junkin, R. L.....	1913
Johnston, W. J.....	1909		

K

Kamman, J. I.....	1914	Key, W. R.....	1909
Kay, J.....	1914	Keys, C. R.....	1915
Kay, E. W.....	1907	Keys, W. R.....	1908
Keefe, W. S. H.....	1904	Kilmer, C. E.....	1913
Keefer, N. G.....	1914	King, C. F.....	1897
Keele, J.....	1893	King, J. T.....	1910
Keffer, A. H. E.....	1909	Kinghorn, A. A.....	1907
Keith, J. C.....	1910	Kingstone, G. A.....	1910
Keith, D. F.....	1907	Kirkland, W. C.....	1884
Keith, H. P.....	1907	Kirkwood, M.....	1911
Kelly, E. A.....	1911	Kirwan, G. L.....	1910
Kelly, S. S.....	1913	Kirwan, P. T.....	1910
Kemp, J. B. O.....	1909	Klingner, L. W.....	1907
Kennedy, J. H.....	1882	Klotz, H. N. (deceased).....	1909
Kennedy, H. G.....	1908	Knight, R. H.....	1902
Keppy, J. D.....	1906	Knight, J. A.....	1914
Kerby, H. S.....	1914	Knight, S.....	1910
Kerr, A. E.....	1913	Kohl, H.....	1915
Kerr, J. A.....	1914	Kormann, J. S.....	1898
Kewin, G. E.....	1914	Kribs, G.....	1905

L

Laidlaw, J. T.....	1893	Laschinger, E. J.....	1892
Laidlaw, R. A.....	1901	Lash, F. L.....	1893
Laidlaw, R. E.....	1915	Lash, N. M.....	1894
Laing, W. F. (deceased).....	1896	Latham, R.....	1899
Laing, A. T.....	1892	Latimer, C. W.....	1914
Laing, J. S.....	1913	Latornell, A. J.....	1903
Laing, P. A.....	1905	Latornell, A.....	1905
Laird, R.....	1886	Lavrock, J. E.....	1898
Lamb, F. C.....	1907	Lawler, E. R.....	1910
Lamb, G. J.....	1915	Lawrence, G. W.....	1915
Lamont, A. W.....	1909	Lawson, W. L.....	1892
Lane, A. (deceased).....	1891	Lawrie, R. R. (deceased).....	1896
Lang, A. G.....	1903	Leach, H. O.....	1915
Lang, J. L.....	1906	Leaver, C. B.....	1910
Lang, S. A.....	1914	Lee, W. A. (deceased).....	1892
Langley, C. E.....	1892	Lee, R. G.....	1910
Langmuir, F. L.....	1902	Leighton, J. W.....	1905
Langmuir, C. B.....	1909	Leitch, J. N. (deceased).....	1910
Lanning, J.....	1911	Lennox, A. E.....	1909
Larkworthy, W. J. (deceased).....	1904	LePan, A. D.....	1907

Leslie, J. N. M.....	1908	Longworthy, W. E.....	1915
Lewis, F. C.....	1908	Lorimer, N. H.....	1914
Lieberman, M.....	1911	Lott, A. E.....	1887
Lillie, G. L.....	1911	Loucks, R. W. E.....	1909
Lindsay, J. H.....	1907	Loudon, T. R.....	1905
Lindsay, R. E.....	1914	Lount, C. T.....	1915
Linton, A. P.....	1906	Lowrie, A. W. P.....	1911
Livingston, H. D.....	1913	Ludgate, B. A.....	1885
Lloyd, N. C. A.....	1909	Lumbers, W. C.....	1901
Lloyd, R. H.....	1915	Lye, O. G.....	1914
Lockhart, W. E.....	1915	Lye, R. G.....	1915
Long, A. L.....	1911	Lynar, H. R.....	1908
Longstaff, J. C.....	1910		

Mac

Macallum, A. F.....	1893	Mackenzie, A. M.....	1914
MacAndrews, W. M.....	1911	MacKenzie, W. S.....	1911
Macaulay, R. V.....	1911	Mackinnon, J. G.....	1909
MacBain, J. T.....	1911	Mackinnon, W.....	1906
MacBeth, C. (deceased).....	1896	Mackintosh, D.....	1898
MacBeth, R. E. A.....	1911	Maclachlan, K. S.....	1913
Macdonald, A. D.....	1910	Maclachlan, W.....	1906
Macdonald, C. A.....	1915	MacLachlan, W. A.....	1909
Macdonald, J. B.....	1910	MacLaurin, J. G.....	1911
Macdonald, J. A.....	1910	Maclea, B. A.....	1909
Macdonald, G. A.....	1910	MacLennan, G. G.....	1910
Macdonald, F. M.....	1911	MacLeod, G.....	1907
Macdonald, W. A.....	1914	MacLeod, D. D.....	1910
Macdonell, I. M.....	1915	MacMillan, G.....	1901
Macdougall, A. C.....	1901	MacMurchy, J. A.....	1896
Macfarlane, E. D.....	1909	MacMurchy, H. G.....	1910
MacGregor, A. E.....	1910	Macpherson, H. E.....	1915
MacKay, A. G.....	1907	Macpherson, N. W.....	1909
MacKay, J. T.....	1902	MacPherson, A. R.....	1913
MacKay, E. G.....	1910	Macpherson, H. N.....	1914
MacKenzie, H. R.....	1913	MacQuarrie, A. H.....	1914
MacKenzie, K. A.....	1906	MacTavish, H. J.....	1910
MacKenzie, H. J.....	1914	MacTavish, W. H.....	1913

Mc

McAllister, J. E.....	1891	McCuaig, O. B.....	1904
McAllister, A. L.....	1893	McCuaig, P. J.....	1909
McAlpine, D. D.....	1909	McCulloch, A. L.....	1887
McAndrews, J. B.....	1911	McCurdy, J. A. D.....	1907
McAree, J. (deceased).....	1882	McDonald, K. D.....	1915
McArthur, R. E.....	1900	McDonald, J. P.....	1915
McArthur, A. S.....	1909	McDonald, R. C.....	1914
McAuslan, H. J.....	1903	McDougall, J. (deceased).....	1884
McBride, A. H.....	1902	McDougall, S. G.....	1910
McBride, T. C.....	1910	McDowall, R.....	1888
McCaffrey, W. R.....	1915	McEachren, J. A.....	1911
McCarthy, T. V.....	1913	McElhanney, T. A.....	1910
McCollum, C. R.....	1909	McElroy, R. W.....	1911
McConnell, A. W.....	1906	McEntee, B.....	1892
McConnell, R. S.....	1913	McEwen, G. G.....	1904
McCordick, A. S.....	1909	McEwen, H. J.....	1911
McCort, C. R.....	1915	McFarlen, G. W.....	1888

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McFarlane, J. A.....	1903	McKnight, J. H.....	1909
McFarlane, W. G.....	1904	McLaren, A. J.....	1911
McFarlane, J. B.....	1907	McLaren, D. L.....	1914
McFarlen, T. J.....	1893	McLean, C. A.....	1905
McFaul, W. L.....	1913	McLean, W. N.....	1905
McGarry, P. J.....	1910	McLean, L. A. (deceased)....	1908
McGeorge, W. G.....	1908	McLeish, A. G.....	1911
McGhie, W. G.....	1911	McLellan, R. A.....	1911
McGibbon, C. P.....	1904	McLennan, A. L.....	1902
McGie, W. R.....	1915	McLeod, G.....	1909
McGill, S. B.....	1914	McMaster, A. T. C.....	1901
McGorman, S. E.....	1906	McMaster, W. A. A.....	1908
McGowan, J.....	1895	McMillan, J. G.....	1900
McGregor, W. W. (deceased)...	1905	McMillan, D.....	1904
McGregor, J. M.....	1908	McMillan, V.....	1909
McGugan, D. F.....	1915	McMordie, H. C.....	1908
McGugan, D. J.....	1907	McNab, J. V.....	1906
McIlwraith, D. G.....	1906	McNaughton, A. L.....	1903
McIntosh, A. H.....	1907	McNaughton, F. W.....	1898
McIntosh, W. G.....	1909	McNeill, F. W.....	1907
McIntyre, J. S.....	1915	McNiven, J.....	1910
McKague, E. V.....	1915	McPherson, A. J.....	1893
McKay, O.....	1885	McPherson, J. A.....	1906
McKay, C. (deceased).....	1904	McPherson, W. B.....	1911
McKay, W. N.....	1895	McQuarrie, M. K.....	1907
McKechnie, F. H.....	1909	McQueen, A. A.....	1911
McKenzie, D. A.....	1911	McRoberts, A. A.....	1908
McKenzie, D. W.....	1905	McSloy, J. I.....	1910
McKenzie, J. A.....	1906	McTaggart, A. L.....	1894
McKim, L. R.....	1910	McVean, H. G.....	1901
McKinnon, H. L.....	1895		

M

Mace, F. G.....	1905	Martin, J. C.....	1911
Madden, J. F. S.....	1902	Martin, W. H.....	1910
Madge, N. G.....	1908	Martin, T.....	1896
Madill, H. H.....	1911	Martindale, E. S.....	1909
Main, W. T.....	1893	Martyn, O. W.....	1909
Maisonville, A. W. R.....	1910	Mason, D. H. C.....	1907
Malcolmson, W. S.....	1907	Matheson, W. C.....	1901
Malone, J. E.....	1908	Mathison, P.....	1901
Manning, N. H.....	1909	Matthews, R. G.....	1914
Manson, G. J.....	1904	Matthews, A. C.....	1910
Manson, A. B.....	1909	Maus, C. A.....	1903
Marani, C. J.....	1888	Maxwell, H. W.....	1914
Marani, V. G.....	1893	Maxwell, W. A.....	1906
Marlatt, K. D.....	1908	Maynard, H. V.....	1907
Marr, N.....	1910	Meader, C. H.....	1910
Marriott, F. G.....	1903	Meadows, C. A.....	1911
Marrs, C. H.....	1902	Meadows, W. W.....	1895
Marrs, D. W.....	1906	Mechin, F. C.....	1914
Marshall, J. A.....	1914	Meitz, W. H.....	1915
Marshall, J. A. P.....	1914	Melson, J. W.....	1907
Marshall, R. J.....	1908	Mennie, R. S.....	1902
Marshall, S. A.....	1907	Menzies, J. M.....	1906
Martin, E. T.....	1915	Merrill, E. B.....	1891
Martin, F.....	1887	Merriman, H. O.....	1910

Middleton, H. T.....	1901	Montgomery, R. H.....	1903
Mickle, G. R.....	1888	Moody, F. H.....	1908
Mickleborough, K. F.....	1913	Moore, H. H.....	1902
Mickler, G. J.....	1913	Moore, E. E.....	1904
Mill, F. X. (deceased).....	1889	Moore, J. H.....	1888
Millar, W. G.....	1914	Moore, J. E. A.....	1891
Miller, D. J.....	1910	Moore, F. A.....	1903
Miller, A. S.....	1914	Moore, W. J.....	1906
Miller, L. Haun.....	1900	Moore, J. M.....	1907
Miller, M. L.....	1903	Moorhouse, W. N.....	1904
Miller, L. R.....	1906	Morden, L. W.....	1905
Milligan, G. L.....	1908	Morgan, J. P.....	1910
Milligan, F. S.....	1910	Morice, J. H.....	1908
Milligan, W. E.....	1914	Morley, P. F.....	1907
Millman, N. C.....	1913	Morphy, J. A.....	1911
Mills, G. G.....	1907	Morris, A.....	1915
Mills, P. E.....	1910	Morris, B. M.....	1915
Mills, P. H.....	1914	Morris, J. L.....	1881
Mills, L. G.....	1911	Morris, C. A.....	1909
Milne, C. G. (deceased).....	1892	Morris, W. D.....	1915
Mines, W.....	1893	Morrison, D.....	1914
Minns, J. B.....	1907	Morton, G.....	1909
Minty, W.....	1894	Mowbray, F. E. H.....	1908
Mitchell, G.....	1915	Muir, J. M.....	1915
Mitchell, J. S.....	1914	Mullins, E. E.....	1903
Mitchell, P. H.....	1903	Mullins, G. J.....	1914
Mitchell, L. C.....	1911	Mulqueen, F. J.....	1913
Mitchell, C. H.....	1892	Munro, A. H.....	1910
Mitchell, B. F.....	1906	Munro, W. H.....	1904
Mitchell, A. B.....	1908	Munro, G. R.....	1905
Moberley, H. K.....	1889	Munro, F. V.....	1909
Moffatt, R. W.....	1905	Muntz, E. P.....	1914
Mogan, J. T.....	1915	Murdie, W. C.....	1913
Molesworth, G. N.....	1907	Murdock, C. R.....	1906
Molesworth, J. C. P. (de- ceased).....	1908	Murphy, C. J.....	1906
Monds, W.....	1899	Murphy, M. H.....	1911
Monk, E. D.....	1908	Murray, E. W.....	1907
Montague, J. R.....	1914	Murray, J. D.....	1907
Montague, F. F.....	1906	Murray, W. P.....	1908
Monteith, E. M.....	1915	Murton, J. C.....	1911
		Mutch, D. A. S.....	1913

N

Nash, J. C.....	1901	Newton, K. L.....	1913
Nash, T. S.....	1902	Newton, W. E.....	1910
Near, W. P.....	1906	Nichol, F. T.....	1910
Neelands, E. V.....	1900	Nicholson, C. J.....	1894
Neelands, E. W.....	1907	Nicholson, C. L.....	1914
Neelands, R. E. K.....	1907	Nicholson, J. B.....	1914
Neelands, R.....	1906	Nicklin, H. S.....	1915
Neilly, B.....	1907	Nicklin, W. G.....	1905
Neilson, M. A.....	1915	Niebel, E. H.....	1911
Neville, E. A.....	1909	Nixon, C. K.....	1911
Nevitt, I. H.....	1903	Noble, E. S.....	1911
Newhall, V. A.....	1910	Noecker, C.....	1914
Newman, W.....	1891	Northey, R. K.....	1911
Newton, J.....	1909	Nourse, A. E.....	1907

O

O'Brien, E. D.....	1905	Oliver, E. W.....	1903
O'Connor, E. B.....	1915	Oliver, J. P.....	1903
Odell, L. S.....	1909	Omand, W. M.....	1915
O'Donnell, V. J.....	1909	O'Neil, C. M.....	1910
O'Flynn, W. A.....	1911	Orr, J. A.....	1911
O'Grady, W. deC.....	1908	O'Sullivan, J. J.....	1907
O'Hearn, J. J.....	1909	Otto, C. J.....	1913
Oke, W. V.....	1911	Owens, J. A.....	1914

P

Pace, J. D.....	1903	Pettingill, R. E.....	1906
Pace, G.....	1904	Phillips, E. H.....	1900
Pae, A. W.....	1909	Phillips, H. G.....	1908
Palmer, C. E.....	1910	Phillips, C. H.....	1910
Pardoe, W. S.....	1904	Phillips, E. P. A.....	1905
Paris, J.....	1904	Phillips, W. E.....	1914
Park, D. G.....	1906	Philp, D. H.....	1903
Parke, J.....	1904	Philp, G. O.....	1914
Parker, A. H.....	1914	Pick, B. W.....	1911
Parker, G. C.....	1910	Pickering, A. E.....	1904
Parker, J. S.....	1911	Pigott, R. B.....	1909
Parkin, J. H.....	1911	Pinhey, C. H.....	1887
Parkinson, N. F.....	1913	Pinkney, D. H.....	1903
Parsons, J. L. R.....	1901	Pivnick, M.....	1908
Paterson, G. W.....	1906	Playfair, N. L.....	1892
Paton, T. K.....	1907	Plunkett, T. H.....	1903
Patten, B. B.....	1903, 1905	Ponton, G. M.....	1909
Patterson, J.....	1899	Pope, A. S. H.....	1899
Patterson, R. G.....	1914	Porte, E. H.....	1911
Patton, J. McD.....	1911	Porte, W. B.....	1906
Paul, R. A.....	1915	Porter, C. F.....	1915
Paulin, F. W.....	1907	Porter, C. J.....	1909
Payne, A. N.....	1915	Porter, J. E.....	1915
Peaker, W. J.....	1904	Potter, R. B.....	1907
Pearce, K. K.....	1910	Powell, G. G.....	1902
Pearce, L. P.....	1915	Powell, W. D.....	1915
Pearson, C. L.....	1911	Power, G. H.....	1901
Peart, J. D.....	1914	Pratt, F. M.....	1911
Peart, J. W.....	1913	Prentice, J. M. (deceased)...	1892
Peck, H. M.....	1915	Price, H. W.....	1901
Peckover, H. J.....	1908	Prochnow, F. E.....	1907
Pedder, J. R. (deceased).....	1890	Proctor, A. I.....	1909
Pennington, C. W.....	1914	Proctor, E. M.....	1908
Pepler, S. J.....	1911	Procunier, J. F.....	1907
Pequegnat, M.....	1908	Proudfoot, H. W. (deceased)...	1897
Perrin, W. J.....	1911	Publow, C. F.....	1908
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Perry, C. V.....	1914	Pullen, E. F.....	1905
Peterkin, S. M.....	1915	Purser, R. C.....	1906
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Quail, H. C.....	1913	Quance, G. E.....	1907
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Railton, L. W.....	1911	Robertson, D. F.....	1903
Raine, H.	1907	Robinson, J. (deceased).....	1891
Raley, W. E.	1915	Robinson, F. J.	1895
Ramsay, W. S.	1910	Robinson, A. H. A.	1897
Ramsey, G. L.	1905	Robinson, L. H.	1904
Ramsperger, A. F.	1909	Robinson, W. A.	1908
Rance, C. C.	1915	Robinson, R. C.	1908
Raney, P. H.	1914	Robinson, W. E.	1911
Rankin, G.	1915	Roblin, H. L.	1911
Rannie, J. L.	1907	Roddick, J. O.	1906
Ransom, J. T.	1908	Rogers, J.	1887
Ratz, E. G.	1913	Rogers, C. H.	1906
Ratz, J. E.	1911	Rogers, L. J.	1908
Ratz, W. F. (deceased).....	1902	Rolfson, O.	1906
Raymer, A. R.	1884	Rolph, H.	1894
Raymond, D. C.	1904	Rose, J. T.	1915
Rayner, G. W.	1905	Rose, K.	1888
Read, F. N.	1911	Rose, R. R.	1908
Redfern, B. J.	1910	Rosebrugh, T. R.	1888
Redfern, W. B.	1908	Ross, A. C.	1915
Redfern, C. R.	1909	Ross, J. A.	1892
Redman, W. B.	1915	Ross, J. E.	1888
Reid, E. V.	1911	Ross, D.	1908
Reid, F. B.	1904	Ross, R. A.	1890
Relyea, P. J.	1915	Ross, K. G.	1906
Revell, G. E. (deceased).....	1899	Ross, R. B. (deceased).....	1905
Rice, R. H.	1914	Ross, R. C.	1906
Richards, E.	1899	Ross, O. W.	1910
Richardson, A. A.	1915	Rothery, L. W.	1911
Richardson, C. E.	1910	Rothwell, T. E.	1905
Richardson, F. L.	1908	Rothwell, H. E.	1907
Richardson, G. H.	1888	Rothwell, H. D.	1914
Richardson, C. W. B.	1907	Rounthwaite, C. H. E.	1900
Richardson, W. A.	1911	Rous, C. C.	1913
Ricker, H. A.	1908	Routly, H. T.	1906
Riddell, J. M.	1913	Rowe, H. M.	1915
Riddell, M. R.	1904	Rowe, T. L. F.	1911
Ridler, A. A.	1907	Roxburgh, G. S.	1904
Ritchie, H. C.	1910	Rubidge, W. F. B.	1910
Ritchie, J. E.	1913	Runciman, A. S.	1911
Roaf, J. R.	1900	Russel, W. B.	1891
Robertson, A. S.	1914	Russel, R.	1893
Robertson, A. S.	1915	Russell, C. H.	1913
Robertson, C. S.	1913	Rust, H. P.	1901
Robertson, F. A.	1908	Rutherford, F. N.	1904
Robertson, H. D.	1902	Rutherford, F. S.	1914
Robertson, J.	1884	Rutledge, L. T.	1909
Robertson, J. M.	1914	Rutley, F. G.	1911
Robertson, J. M.	1893	Rutter, G. W.	1915
Robertson, N. R.	1906	Ryckman, J. H.	1906
Robertson, A. R.	1908		

S

Salter, E. M.	1911	Sara, R. A.	1909
Sanders, W. K.	1906	Sauder, P. M.	1904
Sanderson, A. U.	1909	Sauer, M. V.	1901

Saunders, G. A.....	1899	Sinclair, D. (deceased).....	1902
Saunders, H. W.....	1900	Sinclair, D. G.....	1913
Savage, E. W.....	1915	Sinclair, C. E.....	1914
Scandrett, F. R.....	1911	Sinclair, R. B.....	1915
Scarlett, A. A.....	1913	Sisson, C. E.....	1905
Scheibe, R. R.....	1896	Skaith, J. B.....	1914
Scheibe, H. M.....	1903	Skinner, W. C.....	1914
Schlarbaum, A.....	1909	Slater, F. W.....	1904
Schofield, C. A.....	1907	Smallpiece, F. C.....	1898
Schwenger, C. E.....	1909	Smart, R. S.....	1904
Scott, A. G.....	1915	Smiley, R. W.....	1897
Scott, C. A.....	1909	Smith, A. N.....	1892
Scott, E. H.....	1915	Smith, A.....	1894
Scott, G. S.....	1905	Smith, H. G. (deceased).....	1903
Scott, R. G.....	1915	Smith, H. M. (deceased).....	1914
Scott, W. A.....	1906	Smith, R. W.....	1898
Scott, W. F.....	1897	Smith, J. H.....	1903
Scott, J. W.....	1911	Smith, D. A.....	1904
Seaton, N. D.....	1911	Smith, K. H.....	1911
Secord, A. O.....	1908	Smith, M. L.....	1911
Sedgwick, A.....	1909	Smith, W. C.....	1910
Segre, B. H.....	1909	Smith, G. E.....	1910
Seibert, F. V.....	1909	Smith, F. L.....	1910
Serson, H. V.....	1905	Smith, F. R.....	1907
Servos, F. M.....	1914	Smither, W. J.....	1904
Sewell, L.....	1913	Smithrim, E. R.....	1907
Seymour, H. L.....	1903	Smyth, G. M.....	1914
Seymour, N. F.....	1915	Snaith, W.....	1907
Shanks, T.....	1899	Sneath, R. G.....	1911
Sharp, M. C.....	1913	Somers, N. L.....	1914
Sharpe, N.....	1911	Soper, R. W.....	1913
Shaw, J. H.....	1898	Sparling, M. W.....	1909
Shaw, J. H.....	1915	Speller, F. N.....	1893
Shaw, K. E.....	1913	Spellman, W. A.....	1913
Shaw, W. E. V.....	1908	Spence, J. J.....	1909
Shaw, M. R.....	1909	Spencer, A. C.....	1907
Shaw, W. C.....	1910	Spotton, A. K.....	1894
Sheard, P.....	1911	Spry, R. J.....	1910
Shearer, H. F.....	1908	Squire, G. E.....	1911
Sheehy, J. S.....	1915	Squire, R. H. (deceased).....	1893
Sheply, J. D.....	1904	Stamford, W. L.....	1908
Sheppard, A. C. T.....	1907	Standing, R. O.....	1914
Sheppard, H. L.....	1914	Starr, R. H.....	1908
Sheppard, N. E. D.....	1914	Stayner, D. S.....	1909
Sherman, N. C.....	1910	Steel, W. A.....	1915
Shields, J. D.....	1894	Steele, I. J.....	1902
Shier, W. G.....	1915	Steele, A. L.....	1910
Shipley, A. E.....	1898	Steele, W. S.....	1911
Shirriff, C. H.....	1905	Stern, E. W.....	1884
Shupe, S.....	1914	Steven, H. M.....	1910
Sibbett, W. A.....	1911	Stevenson, W. H.....	1901
Sills, C. P.....	1911	Stewart, A. E.....	1911
Silvester, G. E.....	1891	Stewart, J. A.....	1898
Sime, A. W.....	1914	Stewart, D. L. N.....	1905
Simpson, B. N.....	1914	Stewart, M. A.....	1905
Simpson, C. N.....	1915	Stewart, R. O.....	1911
Sims, F. R.....	1913	Stewart, W. M.....	1906

Stewart, G. S.	1907	Stuart, H. B.	1908
Stewart, A. W. J.	1908	Stuart, J. L. G.	1907-1908
Stewart, N. C.	1909	Stubbs, W. F.	1905
Stiles, J. A.	1907	Stull, W. W.	1897
Stitt, J. B.	1915	Sturdy, N. H.	1905
Stiver, J. L.	1907	Suhler, A. N.	1915
St. Lawrence, J.	1908	Summers, G. F.	1907
Stock, J. J.	1908	Sutcliffe, H. W.	1907
Stock, P. H.	1909	Sutherland, A. L.	1910
Stocking, F. T.	1895	Sutherland, D.	1913
Stone, J. D.	1915	Sutherland, W. H.	1902
Stone, L. I.	1910	Sutherland, C. C.	1909
Stoneman, E. C. R.	1914	Swan, W. G.	1905
Storey, G. C.	1915	Swan, R. G.	1909
Story, R. A.	1911	Sword, A. D.	1908-1909
Strathy, J. M.	1913	Sykes, F. H.	1905
Street, J. C.	1909	Symmes, H. D.	1891
Strome, I. R.	1914	Szammers, C. F.	1911
Stroud, S.	1909		

T

Tate, H. W.	1909	Thomson, O. R.	1907
Taylor, A. N.	1915	Thorne, S. M.	1900
Taylor, R.	1911	Thornley, J. H.	1908
Taylor, T.	1902	Thorold, F. W.	1900
Taylor, W. V.	1893	Tillson, L. B.	1915
Taylor, A.	1900	Tillson, E. D.	1905
Taylor, J. S.	1914	Tilston, J. A.	1914
Taylor, J. W. R.	1908	Tipper, G. A.	1909
Taylor, W. E.	1908	Titus, C. G.	1910
Teasdale, C. M.	1902	Tom, J. A.	1915
Temes, C. N.	1914	Toms, C. G.	1908
Temple, J. B.	1911	Torrance, R. D.	1911
Tennant, D. C.	1899	Torrance, T. E.	1913
Tennant, W. C. (deceased)....	1900	Tough, W. G.	1911
Tennent, E. H.	1914	Townsend, C. J.	1904
Ternan, E. A.	1910	Townsend, D. T.	1904
Thom, W. H.	1910	Traill, J. J.	1905
Thomas, G. C.	1911	Treadgold, W. M.	1905
Thomas, V. C.	1908	Trees, S. L.	1903
Thompson, J. M.	1913	Trees, A. G.	1909
Thompson, P. M.	1907	Treloar, G. E.	1914
Thompson, E. A.	1909	Tremaine, R. C. C. (deceased)	1895
Thompson, H. B.	1910	Trimble, A. V.	1904
Thompson, R. M. A.	1910	Trow, R. M.	1913
Thompson, W. K.	1913	Tucker, B. B.	1904
Thomson, D. J.	1913	Turnbull, W. G.	1909
Thomson, T. K.	1886	Turner, W. E.	1905
Thomson, R. W.	1892	Twidale, E. A.	1914
Thomson, S. E.	1904	Tye, H. W.	1908
Thomson, L. R.	1905-1907	Tyrrell, J. W.	1883
Thomson, J. E.	1906	Tyrrell, H. G.	1886

U

Uffelman, W.	1915	Ure, W. G.	1913
Umbach, J. E.	1903	Uren, A. E.	1905
Underwood, J. E.	1909		

V

Van Allen, K. M.....	1910	Vercoe, H. L.....	1898
VanDyke, F. T.....	1914	Verity, M. F.....	1914
VanEvery, W. W.....	1899	Vezina, L. P.....	1915
VanNorman, C. P.....	1908-1909	Vickers, N.....	1911
VanNostrand, J.....	1909	Vickery, C. L.....	1906
Vatcher, A.....	1909	Villeneuve, T. L.....	1908
Vaughan, J. M.....	1905	Von Gunten, C. F.....	1913
Venney, L. T.....	1910		

W

Waddell, H. O.....	1914	Wheler, A. G.....	1911
Wade, E.....	1904	Whelihan, J. A.....	1903
Wagner, H. W.....	1914	White, A. V.....	1892
Wagner, N.....	1910	White, H. F.....	1903
Wagner, W. E.....	1899	White, W. R.....	1908
Wagner, H. L.....	1905	White, W. J.....	1908
Waite, J. H. C.....	1911	White, F. C.....	1909
Walcott, W. D.....	1911	White, H. M.....	1910
Waldron, J.....	1903	Whitelaw, A. R.....	1909
Walker, E. W. (deceased)....	1904	Whitley, P. L.....	1914
Walker, R. M.....	1910	Whitside, J. L.....	1910
Walker, W. J.....	1907	Wickens, W. S.....	1910
Walker, J. A.....	1908	Wickett, T.....	1889
Walker, C. M.....	1909	Wickett, W. E. (deceased)....	1906
Wallace, G. L.....	1911	Wiggins, T. H.....	1890
Wallace, H. D. M.....	1914	Wigle, A. E.....	1914
Walton, T. (deceased).....	1910	Wigle, J. A. H.....	1914
Wanless, A. A.....	1902	Wilkes, E. D.....	1907
Ward, A. L.....	1915	Wilkes, G. H.....	1911
Wardell, A.....	1911	Wilkinson, T. A.....	1898
Warrington, G. A.....	1910	Wilkinson, R. G.....	1909
Wass, S. B.....	1903	Williams, C. G.....	1903
Watson, F. E.....	1911	Williams, E. R.....	1911
Watson, M. B.....	1910	Williams, J. A. McK.....	1909
Watson, R. B.....	1893	Williams, J. N.....	1915
Watson, J. P.....	1904	Williams, G. K.....	1910
Watt, G. H.....	1899	Williamson, O. T. G.....	1909
Watts, R. E.....	1913	Williamson, D. A.....	1898
Waugh, B.....	1908	Wilson, A. C.....	1914
Webb, C. E.....	1909	Wilson, H. A.....	1911
Webb, E. E.....	1909	Wilson, H. P.....	1914
Webster, C. A.....	1913	Wilson, J. C.....	1915
Webster, H.....	1913	Wilson, R. D.....	1901
Wedlake, R. M.....	1908	Wilson, N. D.....	1903
Weeks, M. B.....	1897	Wilson, J. N.....	1906
Weir, D. H.....	1913	Wilson, A. F.....	1907
Weir, F. E.....	1915	Wilson, F. D.....	1908
Weir, H. M.....	1900	Wilson, J. M.....	1908
Weir, J. M.....	1904	Wilson, L. R.....	1909
Weir, R. P.....	1908	Wilson, F. F.....	1909
Weldon, E. A.....	1897	Wilson, W. H.....	1910
Welford, P. G.....	1911	Wing, D. O.....	1908
Wells, A. F.....	1904	Winters, W. S.....	1913
West, A. M.....	1908	Withrow, W. J.....	1890
West, C. W.....	1915	Withrow, F. D.....	1900

Wood, C. S.....	1911	Wright, A. J.....	1913
Wood, E. M.....	1906	Wright, C. H. C.....	1888
Wood, H. A.....	1915	Wright, R. T.....	1894
Wood, R. F. B.....	1913	Wright, W. F.....	1904
Woodley, G. E. (deceased)....	1910	Wright, L. A.....	1910
Woods, M. H.....	1907	Wright, G. W. A.....	1907
Wookey, S. A.....	1909	Wright, W. J. T.....	1911
Worden, W. G.....	1911	Wrong, F. H.....	1911
Workman, G. R.....	1910	Wylie, W. H.....	1911
Worthington, W. R.....	1904	Wyman, H. K.....	1911-1915

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Yeates, E.....	1899	Young, R.....	1908
Yorke, L. P.....	1911	Young, J.....	1907
Youell, A. W.....	1910	Young, A.....	1911
Young, C. R.....	1903	Young, S.....	1911
Young, W. S.....	1910	Young, R. B.....	1913
Young, W. H.....	1905	Young, R. W.....	1914

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Zahn, H. J.....	1902	Zinkan, W. E.....	1911
Zimmer, A. R.....	1907		

THE
CALENDAR

OF THE

University of Toronto



FACULTY OF
APPLIED SCIENCE AND ENGINEERING
1917-1918

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Sun.	. . 7 14 21 28	Sun.	. . 4 11 18 25	Sun.	. . 4 11 18 25	Sun.	. 1 8 15 22 29
Mon.	. 1 8 15 22 29	Mon.	. . 5 12 19 26	Mon.	. . 5 12 19 26	Mon.	. 2 9 16 23 30
Tues.	. 2 9 16 23 30	Tues.	. . 6 13 20 27	Tues.	. . 6 13 20 27	Tues.	. 3 10 17 24 ..
Wed.	. 3 10 17 24 31	Wed.	. . 7 14 21 28	Wed.	. . 7 14 21 28	Wed.	. 4 11 18 25 ..
Thur.	. 4 11 18 25 ..	Thur.	. 1 8 15 22 ..	Thur.	. 1 8 15 22 29	Thur.	. 5 12 19 26 ..
Fri.	. 5 12 19 26 ..	Fri.	. 2 9 16 23 ..	Fri.	. 2 9 16 23 30	Fri.	. 6 13 20 27 ..
Sat.	. 6 13 20 27 ..	Sat.	. 3 10 17 24 ..	Sat.	. 3 10 17 24 31	Sat.	. 7 14 21 28 ..
MAY		JUNE		JULY		AUGUST	
Sun.	. . 6 13 20 27	Sun.	. 3 10 17 24 ..	Sun.	. 1 8 15 22 29	Sun.	. . 5 12 19 26
Mon.	. . 7 14 21 28	Mon.	. 4 11 18 25 ..	Mon.	. 2 9 16 23 30	Mon.	. . 6 13 20 27
Tues.	. 1 8 15 22 29	Tues.	. 5 12 19 26 ..	Tues.	. 3 10 17 24 31	Tues.	. . 7 14 21 28
Wed.	. 2 9 16 23 30	Wed.	. 6 13 20 27 ..	Wed.	. 4 11 18 25 ..	Wed.	. 1 8 15 22 29
Thur.	. 3 10 17 24 31	Thur.	. 7 14 21 28 ..	Thur.	. 5 12 19 26 ..	Thur.	. 2 9 16 23 30
Fri.	. 4 11 18 25 ..	Fri.	. 1 8 15 22 29 ..	Fri.	. 6 13 20 27 ..	Fri.	. 3 10 17 24 31
Sat.	. 5 12 19 26 ..	Sat.	. 2 9 16 23 30 ..	Sat.	. 7 14 21 28 ..	Sat.	. 4 11 18 25 ..
SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
Sun.	. 2 9 16 23 30	Sun.	. . 7 14 21 28	Sun.	. . 4 11 18 25	Sun.	. 2 9 16 23 30
Mon.	. 3 10 17 24 ..	Mon.	. 1 8 15 22 29	Mon.	. . 5 12 19 26	Mon.	. 3 10 17 24 31
Tues.	. 4 11 18 25 ..	Tues.	. 2 9 16 23 30	Tues.	. . 6 13 20 27	Tues.	. 4 11 18 25 ..
Wed.	. 5 12 19 26 ..	Wed.	. 3 10 17 24 31	Wed.	. . 7 14 21 28	Wed.	. 5 12 19 26 ..
Thur.	. 6 13 20 27 ..	Thur.	. 4 11 18 25 ..	Thur.	. 1 8 15 22 29	Thur.	. 6 13 20 27 ..
Fri.	. 7 14 21 28 ..	Fri.	. 5 12 19 26 ..	Fri.	. 2 9 16 23 30	Fri.	. . 7 14 21 28 ..
Sat.	. 1 8 15 22 29 ..	Sat.	. 6 13 20 27 ..	Sat.	. 3 10 17 24 ..	Sat.	. 1 8 15 22 29 ..

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JANUARY		FEBRUARY		MARCH		APRIL	
Sun.	. . 6 13 20 27	Sun.	. . 3 10 17 24	Sun.	. 3 10 17 24 31	Sun.	. . 7 14 21 28
Mon.	. . 7 14 21 28	Mon.	. . 4 11 18 25	Mon.	. 4 11 18 25	Mon.	. 1 8 15 22 29
Tues.	. 1 8 15 22 29	Tues.	. . 5 12 19 26	Tues.	. 5 12 19 26 ..	Tues.	. 2 9 16 23 30
Wed.	. 2 9 16 23 30	Wed.	. . 6 13 20 27	Wed.	. 6 13 20 27 ..	Wed.	. 3 10 17 24 ..
Thur.	. 3 10 17 24 31	Thur.	. . 7 14 21 28	Thur.	. 7 14 21 28 ..	Thur.	. 4 11 18 25 ..
Fri.	. . 4 11 18 25 ..	Fri.	. . 1 8 15 22 ..	Fri.	. 1 8 15 22 29 .	Fri.	. . 5 12 19 26 ..
Sat.	. 5 12 19 26 ..	Sat.	. 2 9 16 23 ..	Sat.	. 2 9 16 23 30 .	Sat.	. 6 13 20 27 .
MAY		JUNE		JULY		AUGUST	
Sun.	. . 5 12 19 26	Sun.	. 2 9 16 23 30	Sun.	. . 7 14 21 28	Sun.	. . 4 11 18 25
Mon.	. . 6 13 20 27	Mon.	. 3 10 17 24 ..	Mon.	. 1 8 15 22 29	Mon.	. . 5 12 19 26
Tues.	. . 7 14 21 28	Tues.	. 4 11 18 25 ..	Tues.	. 2 9 16 23 30	Tues.	. . 6 13 20 27
Wed.	. 1 8 15 22 29	Wed.	. 5 12 19 20 ..	Wed.	. 3 10 17 24 31	Wed.	. . 7 14 21 28
Thur.	. 2 9 16 23 30	Thur.	. 6 13 20 27 ..	Thur.	. 4 11 18 25 ..	Thur.	. 1 8 15 22 29
Fri.	. . 3 10 17 24 31	Fri.	. . 7 14 21 28 ..	Fri.	. . 5 12 19 26 ..	Fri.	. . 2 9 16 23 30
Sat.	. 4 11 18 25 ..	Sat.	. 1 8 15 22 29 ..	Sat.	. 6 13 20 27 ..	Sat.	. 3 10 17 24 31
SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
Sun.	. 1 8 15 22 29	Sun.	. . 6 13 20 27	Sun.	. . 3 10 17 24	Sun.	. 1 8 15 22 29
Mon.	. 2 9 16 23 30	Mon.	. . 7 14 21 28	Mon.	. . 4 11 18 25	Mon.	. 2 9 16 23 30
Tues.	. 3 10 17 24 ..	Tues.	. 1 8 15 22 29	Tues.	. . 5 12 19 26	Tues.	. 3 10 17 24 31
Wed.	. 4 11 18 25 ..	Wed.	. 2 9 16 23 30	Wed.	. . 6 13 20 27	Wed.	. 4 11 18 25 ..
Thur.	. 5 12 19 26 ..	Thur.	. 3 10 17 24 31	Thur.	. . 7 14 21 28	Thur.	. 5 12 19 26 ..
Fri.	. . 6 13 20 27 ..	Fri.	. 4 11 18 25 ..	Fri.	. . 1 8 15 22 29	Fri.	. . 6 13 20 27 ..
Sat.	. . 7 14 21 28 ..	Sat.	. 5 12 19 26 ..	Sat.	. 2 9 36 23 30	Sat.	. 7 14 21 28 ..

CALENDAR 1917-1918.

- 1917—Sept. 1 Applications for Registration received.
Last day for receiving applications for Supplemental Examinations.
25 Supplemental Examinations begin.
Meeting of Faculty Council.
Enrolment.
First Term begins.
Last day for receiving Vacation Work.
President's address to students at 3 p.m.
- Oct. 5 Meeting of Faculty Council.
17 Meeting of Engineering Society.
31 Meeting of Engineering Society.
- Nov. 2 Meeting of Faculty Council.
14 Meeting of Engineering Society.
28 Meeting of Engineering Society.
- Dec. 7 Meeting of Faculty Council.
12 Meeting of Engineering Society.
20 First Term ends at 12 noon.
- 1918—Jan. 8 Second Term begins.
Last day for receiving Theses for B.A.Sc.
11 Meeting of Faculty Council.
16 Meeting of Engineering Society.
30 Meeting of Engineering Society.
- Feb. 1 Meeting of Faculty Council.
13 Meeting of Engineering Society.
27 Meeting of Engineering Society.
- Mar. 1 Meeting of Faculty Council.
13 Meeting of Engineering Society.
15 Annual elections of Engineering Society.
27 Annual Meeting of Engineering Society.
29 Good Friday—Building closed.
- April 5 Meeting of Faculty Council.
Lectures and practical work close
9 Annual Examinations begin.
- May 3 Meeting of Faculty Council.
- June 7 Annual Commencement.

The buildings will be closed on all public holidays and daily at noon during July and August.

University of Toronto.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

President.....R. A. FALCONER, LL.D., D.Litt., C.M.G.
Dean of Faculty.....W. HODGSON ELLIS, M.A., M.B.
Secretary of Faculty.....A. T. LAING, B.A.Sc.
Bursar.....F. A. MOURÉ, Esq.

G. R. ANDERSON, M.A., <i>Associate Professor of Physics.</i>	411 Manning Ave.
R. W. ANGUS, B.A.Sc., Mem. Am. Soc. M.E. <i>Professor of Mechanical Engineering.</i>	42 Howland Ave.
E. G. R. ARDAGH, B.A.Sc., <i>Assistant Professor of Analytical Chemistry.</i>	Chem. & Mining Bldg.
L. M. ARKLEY, M.Sc., M. Can. Soc. C.E., <i>Assistant Professor in Mechanical Engineering.</i>	61 Indian Rd. Crescent
J. W. BAIN, B.A.Sc., <i>Professor of Chemical Engineering.</i>	393 Brunswick Ave.
M. C. BOSWELL, M.A., Ph.D., <i>Assistant Professor of Organic Chemistry.</i>	Walsingham Apts.
J. R. COCKBURN, B.A.Sc., A.M. Can. Soc. C.E., <i>Assistant Professor of Descriptive Geometry</i>	100 Walmer Rd. (On active service)
S. R. CRERAR, B.A.Sc., D.L.S., <i>Lecturer in Surveying.</i>	122 Grenadier Rd.
W. HODGSON ELLIS, M.A., M.B., <i>Professor of Applied Chemistry.</i>	74 St. Albans St.
P. GILLESPIE, M.Sc., C.E., M. Can. Soc. C.E., <i>Associate Professor of Applied Mechanics.</i>	358 Davenport Rd.
G. A. GUESS, M.A., <i>Professor of Metallurgy.</i>	Oakville.
H. E. T. HAULTAIN, C.E., M.I.M.M., <i>Professor of Mining Engineering.</i>	63 Heath St., W.
A. T. LAING, B.A.Sc., <i>Assistant Professor of Applied Mechanics.</i>	146 Balmoral Ave.
T. R. LOUDON, B.A.Sc., <i>Assistant Professor of Ferro-Metallurgy.</i>	189 Sheldrake Blvd. (On active service)
A. WELLESLEY McCONNELL, B.A.Sc., <i>Assistant Professor of Architecture.</i>	171 Spadina Rd. (On active service)
J. MCGOWAN, B.A., B.A.Sc., <i>Professor of Applied Mechanics.</i>	Engineering Building.

H. W. PRICE, B.A.Sc., <i>Associate Professor of Electrical Engineering.</i>	474 Palmerston Ave.
T. R. ROSEBRUGH, M.A., <i>Professor of Electrical Engineering.</i>	92 Walmer Rd.
L. B. STEWART, O.L.S., D.T.S., <i>Professor of Surveying & Geodesy.</i>	161 Admiral Rd.
J. J. TRAILL, B.A.Sc., <i>Lecturer in Hydraulics.</i>	53 Fulton Ave.
W. M. TREADGOLD, B.A., <i>Assistant Professor of Surveying.</i>	13 Woodlawn Ave. E.
C. H. C. WRIGHT, B.A.Sc., Mem. O.A.A., <i>Professor of Architecture.</i>	419 Markham St.
C. R. YOUNG, B.A.Sc., C.E., M. Can. Soc. C.E., <i>Assistant Professor of Structural Engineering.</i>	98 Hilton Ave.

Sessional Appointments.


J. L. BANKS, <i>Instructor in Modelling.</i>	176 Kingston Rd.
E. W. BANTING, B.A.Sc., <i>Lecturer in Surveying.</i>	101 Farnham Ave.
J. H. BILLINGS, B.A.Sc., S.M., <i>Lecturer in Machine Design.</i>	Weston, Ont.
J. T. BURT-GERRANS, M.A., Phm.B., <i>Lecturer in Electrochemistry.</i>	46 Dewson St.
A. R. CLUTE, <i>Lecturer in Accountancy.</i>	47 Elgin Ave.
F. C. DYER, B.A.Sc., <i>Lecturer in Mining Engineering.</i>	241 Melita Ave.
H. V. ELLSWORTH, Ph.D., <i>Demonstrator in Electrochemistry</i>	73 Tranby Ave.
W. S. FERGUSON, C.A., <i>Lecturer in Accountancy.</i>	52 Tranby Ave.
W. S. GUEST, B.A.Sc., <i>Lecturer in Electrical Engineering.</i>	30 McMaster Ave.
C. W. JEFFERYS, A.R.C.A., Mem. O.S.A., <i>Instructor in Freehand Drawing.</i>	York Mills
J. T. KING, B.A.Sc., <i>Lecturer in Mining Engineering.</i>	87 Pine Crest Rd.
MISS J. C. LAING, B.A., <i>Instructor in French.</i>	16 Appleton Ave.
H. M. LANCASTER, B.A.Sc., <i>Lecturer in Sanitary Chemistry.</i>	22 Palmerston Gardens

J. M. LYLE, <i>Instructor in Architectural Design.</i>	19 Avondale Rd.
O. MARGISON, B.A.Sc., <i>Demonstrator in Drawing.</i>	62 College St.
R. J. MARSHALL, B.A.Sc., <i>Demonstrator in Applied Mechanics.</i>	11 Glenholme Ave.
J. H. PARKIN, B.A.Sc., <i>Lecturer in Mechanical Engineering.</i>	10 Columbine Ave.
L. J. ROGERS, B.A.Sc., <i>Demonstrator in Chemistry.</i>	528 Brunswick Ave.
W. J. SMITHER, B.A.Sc., A.M. Can. Soc. C.E., <i>Lecturer in Structural Engineering.</i>	Pensax Court
D. J. THOMSON, B.A.Sc. <i>Demonstrator in Thermodynamics.</i>	113 Gothic Ave.
G. L. WALLACE, B.A.Sc., <i>Demonstrator in Physics.</i>	237 High Park Ave.
F. E. WATSON, B.A.Sc., <i>Demonstrator in Drawing.</i>	330 Clinton St.
H. S. WEPPLER, B.A.Sc. <i>Demonstrator in Electrical Engineering.</i>	352 Clinton Street.
A. R. ZIMMER, B.A.Sc., <i>Lecturer in Electrical Engineering.</i>	80 Pine Crest Road

MEMBERS OF OTHER FACULTIES GIVING INSTRUCTION TO STUDENTS IN APPLIED SCIENCE.

F. B. ALLAN, M.A., Ph.D., <i>Associate Professor of Organic Chemistry.</i>	380 Brunswick Ave.
ALFRED BAKER, M.A., <i>Professor of Mathematics.</i>	81 Madison Ave.
B. A. BENSLEY, B.A., Ph.D., <i>Professor of Zoology.</i>	37 Admiral Rd.
C. A. CHANT, M.A., Ph.D., <i>Associate Professor of Astro-Physics.</i>	201 Madison Ave.
W. A. CLEMENS, M.A., Ph.D., <i>Lecturer in Biology.</i>	319 Avenue Rd.
A. P. COLEMAN, M.A., Ph.D., <i>Professor of Geology.</i>	476 Huron St.
A. T. DELURY, M.A., <i>Professor of Mathematics.</i>	University of Toronto
J. H. FAULL, B.A., Ph.D., <i>Associate Professor of Botany.</i>	102 Yorkville Ave.
J. G. FITZGERALD, M.B., <i>Associate Professor of Hygiene.</i>	186 Balmoral Ave.
W. J. LOUDON, B.A., <i>Professor of Mechanics.</i>	133 Walmer Rd.
M. A. MACKENZIE, M.A., F.I.A., <i>Professor of Mathematics.</i>	1 Bellwoods Park
W. L. MILLER, B.A., Ph.D., <i>Professor of Physical Chemistry.</i>	50 St. Albans St.
G. H. NEEDLER, B.A., Ph.D., (Leipsic) <i>Professor of German.</i>	103 Bedford Rd.
W. A. PARKS, B.A., Ph.D., <i>Associate Professor of Geology.</i>	69 Albany Ave.
A. L. PARSONS, B.A., <i>Assistant Professor of Mineralogy.</i>	22 Kendal Ave.
T. L. WALKER, M.A., Ph.D., <i>Professor of Mineralogy and Petrography.</i>	62 Maple Ave.
E. M. WALKER, B.A., M.B., <i>Assistant Professor of Zoology.</i>	67 Alcina Ave.
J. S. WILL, B.A., <i>Professor of French.</i>	56 Ranleigh Ave.

Sessional Appointments.

J. G. BEATTY, B.A., <i>Fellow in Mathematics.</i>	12 Major St.
S. BEATTY, M.A., <i>Lecturer in Mathematics.</i>	22 Alvin Ave.
A. J. FOERSTER, B.A., <i>Fellow in Mathematics.</i>	242 Major St.
A. C. HAZEN, B.A., <i>Fellow in Geology.</i>	
A. MACLEAN, B.A., <i>Lecturer in Geology.</i>	102 College St.
I. R. POUNDER, B.A.,  <i>Lecturer in Mathematics.</i>	68 Hazelton Ave.
J. E. THOMSON, B.A.Sc., <i>Lecturer in Mineralogy.</i>	57 Queen's Park
J. B. WALLACE, B.A., <i>Lecturer in French.</i>	4 Gormley Ave.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

Historical Sketch.

The Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practical Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By the terms of this order the management and discipline of the School was vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degrees in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

By the University Act, 1906, the School of Practical Science was united to the University of Toronto as its Faculty of Applied Science and Engineering.

GRADUATING DEPARTMENTS.

There are eight regular Departments of Instruction leading to the degree of Bachelor of Applied Science:—

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical Engineering.
8. Metallurgical Engineering.

The instruction given in these departments extends over a period of four years and is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such training as may make him immediately useful when he commences professional work.

DEGREE OF MASTER OF APPLIED SCIENCE (M.A.Sc.).

(For requirements, see page 73.)

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem. E.), as the case may be, subject to the rules and regulations established by the University. (See page 73.)

FELLOWSHIPS.

Fellowships of the value of \$500 each, open to graduates, are offered annually in the various departments.

Applications for these fellowships are to be made annually in writing to the Secretary of the Faculty on or before the 1st day of May.

SCHOLARSHIPS.

The Boiler Inspection and Insurance Company of Canada offers a Scholarship in the Department of Mechanical Engineering of the value of \$130.00 to the student who obtains highest Honour Standing in the regular examinations of the third year.

The successful candidate will be expected to proceed to his fourth year during the session next following the date of the award.

The amount of the award will be credited by the Bursar to the fees of the fourth year of the successful candidate.

Research Fellowship.

Two research Fellowships of the value of \$500 each are offered annually by the Alumni Association of the Faculty of Applied Science and Engineering.

I. MATRICULATION.

1. The matriculation requirements of this Faculty are based upon those given in the curriculum for Junior Matriculation, a copy of which may be obtained on application.

2. A candidate for matriculation must produce satisfactory certificates of good character.

3. The subjects are as follows:

English, History, any three of the following, viz., Greek, Latin, French, German, Experimental Science, with pass standing in Honour Mathematics.

In selecting the options it is recommended that students take French, German and Experimental Science. In the department of Architecture French is required, in Applied Chemistry and Chemical Engineering German is required, and in Mechanical Engineering it is desirable that students take German.

4. The pass standard is forty per cent. of the marks assigned to a paper, with an average of sixty per cent.

5. A candidate who has obtained an average of sixty per cent. on all the papers but has failed to obtain forty per cent. in not more than two papers may complete matriculation by passing on these papers at any one subsequent examination.

6. A candidate who has obtained forty per cent. on each of at least eight papers, with an average of sixty per cent. on the same, will be credited with these papers. In order to complete his Matriculation, he must obtain at one subsequent examination forty per cent. on each of the remaining papers, with an average of sixty per cent.

7. The examination for pass and honour Junior Matriculation is held annually in June at centres in Ontario, and, if application is made to the Senate, the examination may, with the co-operation of the Department of Education, be held at centres outside Ontario.

8. Applications accompanied by the fee of \$5.00 must be sent not later than the 15th of May to the local Public School Inspector, or in the case of candidates intending to write at the University, to the Registrar.

9. A Junior Matriculation examination, at which no honour papers are set, will be held in September at the University and at such other centres as may from time to time be authorized. Candidates entitled to the privileges of supplemental examinations, as well as new candidates, may present themselves at this examination.

10. Applications to write on the September examination, together with the necessary fee, must be received at the Department of Education not

later than September 1, for those who wish to write at any centre established in Ontario, and not later than August 1 for any centre elsewhere in Canada.

11. Forms of application, the time-table of the September examination, and further particulars may be had upon application to the Department of Education.

II. ADMISSION.

A candidate for admission must have completed the seventeenth year of his age on or before the first of October of the year in which he seeks to enter.

Applications for admission must be made on blank forms supplied by the Registrar, and should be forwarded early in September.

Applications will be considered from (a) those who have completed matriculation, including those who hold certificates recognized as equivalent—see matriculation curriculum—, (b) those who have failed in not more than two papers of the matriculation examination. The latter must complete matriculation before being eligible to enter the second year.

Applications based upon other certificates than those mentioned will be considered as occasion may require. Such certificates must be accompanied by an official statement of the marks in the various subjects upon which the certificate was granted.

ADMISSION AD EUNDEM STATUM.

An undergraduate of another University may be admitted *ad eundem statum* on such conditions as the Senate on the recommendation of the Council of the Faculty may prescribe.

An applicant for admission *ad eundem statum* must submit with his petition (1) a calendar of his University giving a full statement of the courses of instruction; (2) an official certificate of character and academic standing.

III. REGISTRATION.

Registration in the various years will begin Sept. 1st. Blank cards for the purpose will be supplied by the Secretary on request. (See "Dues and Deposits," next page.)

IV. FEES.

All fees are payable at the Bursar's office between the hours 10 a.m. and 1 p.m. of each week day except Saturday.

The annual fees including tuition, library, laboratory supplies and one annual examination shall be as follows:

First Year.

If paid in full on or before November 5th..... \$100.00

By instalments:

First instalment, if paid on or before November 5th..... 50.00

Second instalment, if paid on or before February 5th..... 55.00

Second Year.

If paid in full on or before November 5th.....	\$110.00
By instalments:	
First instalment, if paid on or before November 5th.....	55.00
Second instalment, if paid on or before February 5th.....	60.00

Third and Fourth Years.

If paid in full on or before November 5th.....	\$120.00
By instalments:	
First instalment, if paid on or before November 5th.....	60.00
Second instalment, if paid on or before February 5th.....	65.00

Repeating the Year.

If paid in full on or before November 5th.....	\$50.00
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The above fees are payable in advance. After November 5th a penalty of \$1.00 per month will be imposed until the whole amount is paid. In the case of payment by instalments the same rule as to penalty will apply.

Students desiring to pay in instalments must have paid the fees due in the first term before proceeding to the work of the second term.

General Fees.

Matriculation, or registration of Matriculation.....	\$ 5.00
Supplemental examination.....	10.00
Admission <i>ad eundem statum</i>	10.00
Degree of B.A.Sc. (payable not later than April 1st).....	10.00
Degree of M.A.Sc.....	25.00

Dues and Deposits.

(Payable to the Secretary of the Faculty at the time of registration.)

Engineering Society membership.....	\$2.00
Annual deposit.....	2.00

Charges for waste, neglect and breakage are to be met out of the deposit fee, the balance of which will be refunded to the student at the end of the session.

Students' Council Fee.

The Annual Fee.....	\$2.00
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Every male student in attendance, proceeding to the Degree of Bachelor of Applied Science and Engineering, is required to pay to the Bursar, at the time of the entry of his name with the Secretary, the Annual Fee of two dollars, for the maintenance of the Council of the Undergraduates.

GENERAL INFORMATION FOR STUDENTS.

The Council of University College and the governing bodies of the federated universities and colleges, respectively, have disciplinary jurisdiction over and entire responsibility for the conduct of their students in respect of all matters arising or occurring in or upon their respective college buildings and grounds, including residences.

Military Instruction.

By order of the Board of Governors each male student proceeding to a degree must take a course of military instruction. He must first undergo a physical examination under the direction of the Physical Director of the University in order to determine his fitness for such military instruction. Each student deemed unfit must take a course in Physical training such as will meet his special case.

The Roll of Service.

The Board of Governors of the University is arranging for the publication of an official Roll of Service for the whole University. It is hoped that a provisional edition will be issued in September, 1917. In this will be given in brief the record of each graduate and undergraduate who is or has been on Active Military Service as far as it is known. One or more larger editions will appear later. The readers of this Calendar can give valuable assistance if they will send in memoranda concerning their friends, giving full details. Communications should be addressed to the Editor, The Roll of Service, University of Toronto.

of all matters arising or occurring in or upon their respective college buildings and grounds, including residences.

The councils of such of the faculties as have assigned for their separate use any building or buildings and grounds, including residences, have disciplinary jurisdiction over and entire responsibility for the conduct of all students in their respective faculties in respect of all matters arising or occurring in or upon such building, or buildings and grounds.

In all such cases, and, save as aforesaid, as respects all students to whatsoever college or faculty they may belong, disciplinary jurisdiction is vested in the Caput, but the Caput may delegate its authority in any particular case or by any general regulation to the council or other governing body of the university or college or faculty to which the student belongs.

The Caput has also power and authority to determine by general regulations, or otherwise, to what college, faculty or other body the control of university associations belongs.

If there be any questions as to the proper body to exercise jurisdiction in any matter of discipline which may arise, the same shall be determined by the Caput, whose decision shall be final.

Disciplinary jurisdiction includes the power to impose fines.

REGULATIONS RESPECTING STUDENTS.

No student will be enrolled in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Council to be prejudicial to the interests of the University.

All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council. In particular, students of all Faculties are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles". Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

Any student who may be convicted of having taken part in processions through the city, which have not been authorized by the police authorities after application by the Executive of the Students' Council, will be severely disciplined.

All students shall be in attendance during the whole of each term. Those whose attendance or work is reported as unsatisfactory are liable to dismissal by the Council.

No student will be allowed to repeat the work of any year more than once.

Information as to the text-books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

OPTIONS.

In departments 1, 2, 3 and 7 of the first and second years, students have the option of taking either French or German. The selection made for the first year must be continued during the second year.

In department 5, second year, an option is permitted between Biology and Calculus as the student, upon consultation with the head of the department in Chemistry, may decide.

In the fourth year, optional courses are arranged in certain departments. Students are required to submit their selection to the Secretary in writing, not later than September 15th. The proposed selection must be approved by Council before adoption.

REGULATIONS RESPECTING EXAMINATIONS.

Regular Examinations.

A student who in either term of the session fails to perform the work of his course in a manner satisfactory to the professors in charge, will not be allowed to present himself at the final examinations of the year.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the annual examinations in April, notice in writing of their intention to take such examinations. A penalty of \$1.00 will be imposed upon all candidates who fail to give notice within the proper time.

In the second, third and fourth years annual examinations will be held at the beginning of the second term on all subjects completed during the first term.

No student will be allowed to write at the annual examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examination will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, electrical design, optics, surveying and architecture, the drawings set in these subjects must be made.

Candidates who fail in passing the annual examinations will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

Term Examinations.

In the first year only, term examinations in three subjects will be held on the last two days of the first term.

The subjects will not be announced until the day previous to the first examination.

The results of these examinations will be incorporated with those of the annual examinations in the same subjects in the ratio of 1 to 2.

Supplemental Examinations.

A candidate who fails in one or two subjects at the Annual Examinations will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 25th of September, 1917. Candidates are required to send to the Secretary of the Faculty not later than the first of September, notice in writing of their intention to take such examinations, and to remit to the Bursar the fee of \$10.00. A penalty of \$1.00 will be imposed upon all candidates who fail to give notice within the time stated.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Vacation Work.

Vacation work must be handed in on or before the first day of the session.

Vacation notes must be on construction only, except in Department 2 (see p. 73), and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be freehand pencil drawings with figured dimensions.

Notes must be made in standard note books approved of by the Faculty. Notes which have been taken during the session in connection with the work in drawing will not count as vacation work.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

Shop Work.

Students in Mechanical and Electrical Engineering are not considered as having completed their course of study, nor are degrees granted until certificates have been submitted to the Council, and accepted as satisfactory, showing not less than eight months of mechanical experience in production of some kind under commercial conditions. Preferably the work undertaken should be in one of the manufacturing industries or trades with which the Course is related.

It is not desirable that any student in these Courses should enter sales or other non-production departments of the engineering industries without having acquired some personal experience in mechanical production. It is best to obtain this experience under commercial conditions. Otherwise one can not at all appreciate shop conditions and limitations.

Honours.

Honours will be granted in each department to the students who obtain at least 40 per cent. in each subject, and 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Honour Graduate standing will be granted to those who obtain honours in the final and in one previous year.

REGULATIONS RESPECTING TERM WORK.

Students working in any laboratory must be governed by the regulations relating thereto as made known from time to time.

No laboratory reports or drawings may be removed from the laboratories without permission. The Council reserves the right to dispose of them as may be thought proper.

Field Work.

No field notes will be counted which have not been taken in the field and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

Drafting Rooms.

Drawings prescribed for the first term of the session will not be counted unless finished in that term.

The minimum number of drawings in first and second years shall be twenty-five, and the maximum number thirty-five, except in the Department of Analytical and Applied Chemistry, in which the number shall be fifteen and twenty-five respectively.

No drawings will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

Theses.

In the Fourth Year each student is required to prepare a thesis on a subject approved by the Council. The title of the thesis must be sent to the Secretary of the Faculty for approval on or before November 1st, and the completed thesis must be handed in not later than the first day of the second term and shall become the property of the University. The rules governing size, form, etc., may be obtained on application to the Secretary.

EXEMPTIONS.

Applications for exemption from any of the regulations must be made to the Council in writing and the particulars of the case fully stated.

1. DEPARTMENT OF CIVIL ENGINEERING.

The courses of study in Civil Engineering are designed to give the student a sound training in the fundamental scientific principles on which the practice of the profession is based. The instruction is given by means of lectures and practical work in the field, the drafting room and the laboratory. In this way the student is led to apply the principles developed in the classroom.

SUBJECTS OF INSTRUCTION.**Civil Engineering—First Year.**

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying.....	205, 206	1	9	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry.....	75	2		2	
Modern Language.....	217, 218	1		1	
Accounts.....	65	1		1	
Drawing.....	117		13		22

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Spherical Trigonometry.....	191	1			
Elementary Astronomy.....	55	1		1	
Descriptive Geometry.....	121	1		1	
Surveying.....	207, 208	1	9	1	
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Optics.....	197	1	1½		
Hydrostatics.....	196			1	1½
Engineering Chemistry.....	85			1	
Organic Chemistry.....	87	1			
Mineralogy.....	159, 161	2	1		2
Banking and Finance.....	66	1		1	
Modern Language.....	217, 218	1		1	
Drawing.....	123		12		1
Chemical Laboratory.....	81				6

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y
Vacation Work.....	220				
Least Squares.....	192			1	
Practical Astronomy and Geodesy.....	56, 57	2		2	
Surveying and Levelling....	209, 210	1	9	1	
Descriptive Geometry.....	127	1			
Hydraulics.....	29, 30	2		2	3
Photography.....	199	1	1½		1½
Ferro-Metallurgy.....	181	1		1	
Theory of Structures.....	18	2		2	
Cements and Concrete.....	21			1	
Engineering Chemistry....	94	1		1	
Geology.....	150	1		1	
Limited Companies.....	67	1		1	
Heat.....	198	1	1½		
Strength of Materials.....	14				2
Drawing.....	128		8		19

Fourth Year.

†Foundations.....	20	1	1	1	1
Electricity.....	140	1		1	
†Thermodynamics.....	34, 39a	1		1	2
Economic Geology.....	151	1		1	
Contracts and Specifications	68			1	
Thesis.....	219				
And one of					
(a) { Astronomy.....	58, 59	2	23	2	
{ Geodesy.....	60	2		2	23
(b) { Sanitary Engineer- ing.....	213	1½	16	1½	16
{ Highway Engineer- ing.....	214	1	6	1	6
(c) Structural Engineer- ing.....	215	6	22	7	22
(d) Strength of Materials 16, 17, 22, 23 with either :		3½	11	3½	11
(1) Hydraulics.....	31, 31a, 32	3	10	3	10
or					
(2) Railway Engineering.	211, 212	2	11	2	11

† Not required of those taking the Astronomy option.

2. DEPARTMENT OF MINING ENGINEERING.

The course in Mining Engineering is intended to serve as a preliminary training for those who expect to practise the art of mining or metallurgy. In the first two years it differs very little from the course in civil engineering, in the third year some subjects peculiar to mining and metallurgy are taken up.

In general this course is designed to first give the student a good training in the parts of engineering essential to all branches, such as surveying, drafting, etc., and then in the upper years to allow him to follow studies peculiar to mining engineering.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least six months' practical experience in work connected with mining, metallurgy or geology, for which they must have received regular wages. Certificate forms, giving full details as to acceptable classes of work, will be furnished on application, and should be obtained by all students before entering employment.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying.....	205, 206	1	9	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry.....	75	2		2	
Modern Languages.....	217, 218	1		1	
Accounts.....	65	1		1	
Drawing.....	117		13		19
Chemical Laboratory.....	76				3

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	121	1		1	
Surveying.....	207, 208	1	9	1	
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Optics.....	197	1	1½		
Hydrostatics.....	196			1	1½
Inorganic Chemistry.....	79	1			
Organic Chemistry.....	87	1			
Engineering Chemistry.....	85			1	
Mineralogy.....	157, 160	2	1		3
Geology.....	150	1		1	
Mining.....	170, 171	1	3		
Metallurgy.....	183			1	
Modern Languages.....	217, 218	1		1	
Banking and Finance.....	66	1		1	
Drawing.....	123		7		7
Chemical Laboratory.....	81, 82				12

Mining Engineering—Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work.....	220				
Surveying and Levelling.....	209, 210	1	9		
Theory of Structures.....	19	2			
Hydraulics.....	29a	2		2	
Electricity.....	140	1		1	
Engineering Chemistry.....	94	1		1	
Analytical Chemistry.....	80	1		1	
Assaying.....	173	1	3		3
Petrography.....	163	1		1	
Mineralogy.....	164		2		2
Economic Geology.....	151, 156	1		2	2
Ore Deposits.....	155	1		1	
Mining.....	172			2	3
Ore Dressing.....	177	1		1	
Ferro-Metallurgy.....	181	1		1	
Metallurgy.....	184	1		1	
Limited Companies.....	67	1		1	
Drawing.....	132		9		2
Chemical Laboratory.....	93				11

Fourth Year.

Thermodynamics.....	34	1		1	
Electrochemistry.....	101	2			
Assaying.....	174			1	3
Petrography.....	165, 166	1	2	1	2
Geology, Archaean and Glacial.....	152	2	1	2	
Geology, Mining.....	153	1		1	
Mining.....	175	1		1	
Ore Dressing.....	179	1		1	
Metallurgy.....	180, 182	1		1	6
Cost-keeping, etc.....	70	1		1	
Milling.....	176				6
Power.....	32a, 39a, 141		3		3
Design.....	215		3		3
Chemical Laboratory.....	112		12		
Thesis.....	219		7		2

3. DEPARTMENT OF MECHANICAL ENGINEERING.

The course in this Department is designed to meet the needs of those students who are intending to take up the work connected with Mechanical Engineering, such as the design of gas engines, steam engines, steam boilers, steam turbines, air compressors, etc.; the design and installation of the machinery connected with power plants and central stations, steam piping and other similar problems. The work is also so arranged that the student becomes somewhat familiar with the design of travelling cranes and mill buildings and similar problems connected with structural steel work.

Since the work of the mechanical engineer and of the electrical engineer is closely allied, the courses in these two departments in the first two years are identical and cover the subjects mentioned below.

In the third year the work becomes more specialized, the mechanical engineers paying more attention to heat engines of various types, and to mill building design and other work of similar nature. The study of electricity is continued and the student gets considerable practice in the mechanical and electrical laboratories.

In the fourth year the student devotes himself still more closely to his chosen work, placing the greater stress on thermodynamics and the theory and testing of heat engines, and problems in machine design. Much time is spent in the mechanical laboratories testing gas and steam engines and other machines.

Before receiving the degree in this department candidates are required to present satisfactory evidence of having had at least eight months' practical experience in one of the principal trades connected with Mechanical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering, as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.
Mechanical Engineering—First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Magnetism and Electricity.	135	2			
Electric Circuits.....	136			2	
Elementary Chemistry....	75	2		2	
Drawing.....	120		20		20
Electrical Laboratory.....	137		1½		1½
Modern Language.....	217, 218	1		1	
Accounts.....	65	1		1	

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	121	1		1	
Dynamics.....	12	1		1	
Theory of Mechanism.....	25	2		2	
Steam Engines.....	38	1			
Strength of Materials.....	13	2		2	
Optics.....	197	1	1½		
Hydrostatics.....	196			1	1½
Electricity.....	138, 139	2	2½	2	2½
Engineering Chemistry.....	85			1	
Organic Chemistry.....	87	1			
Banking and Finance.....	66	1		1	
Modern Language.....	217, 218	1		1	
Drawing.....	123		12		19
Chemical Laboratory.....	81		6		
Machine Details.....	28a			1	

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work.....	220				
Mechanics of Machinery...	26	1		1	
Machine Design.....	27	1	7½	1	7½
Thermodynamics.....	33, 35	2	2	2	3
Heat Engines.....	39	1		1	
Hydraulics.....	29, 30	2		2	1
Theory of Structures.....	19	2			
Ferro-Metallurgy.....	181	1		1	
Magnetism and Electricity.	144, 142	2	4½	2	4½
Alternating Current.....	143	1		1	
Engineering Chemistry.....	94	1		1	
Limited Companies.....	67	1		1	
Strength of Materials.....	14		2		
Drawing.....	132		9		

Fourth Year.

Mill Building Design.....	24	1	3	1	3
Cost-keeping, etc.....	69	1		1	
Machine Design.....	28	1	4	1	4
Thesis.....	219				
And two of					
(d) Hydraulics.....	31, 31a, 32	3	9	3	9
(e) Strength of Materials	16, 17, 22, 23	3½	10	3½	10
(g) Thermodynamics....	36, 36a, 37	3	10	3	10

4. DEPARTMENT OF ARCHITECTURE

The instruction in this department is arranged to lay a broad foundation for the subsequent professional life of its graduates, and incidentally to prepare its students to be immediately useful in an architect's office. The curriculum has been arranged to meet the aesthetic and scientific needs of the profession, and includes History and Principles of Architecture, Free-hand Drawing in pencil, ink and color, Modelling, Architectural Design, Analysis and Criticism of Buildings, Mathematics, Statics, Strength and Elasticity of Materials, Theory of Construction and Heating and Ventilation.

The equipment of the department includes a working library of 1,000 volumes, a large file of periodicals, 2,500 photographs, 2,000 stereographic photos, 4,500 lantern slides, and a large collection of models and casts.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	116	1		1	
Building Measurement.....	52	1	9	1	
Statics.....	10	2		2	
Elementary Chemistry	75	2		2	
History and Principles of Architecture.....	40	1	3	1	
French.....	217	1		1	
Accounts.....	65	1		1	
Drawing.....	118		12		21
Freehand Drawing.....	49		2		2
Modelling.....	50		2		2

Second Year

Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	122	1		1	
Strength of Materials.....	13	2		2	

Second Year—Continued.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Optics and Lighting.....	197 _a	1	1½		
Illumination.....	200			1	1½
Architectural Design.....	46	1		1	
History of Architecture....	41	1		1	
Orders of Architecture.....	45	1		1	
History of Ornament.....	43	1		1	
French.....	217	1		1	
Banking and Finance.....	66	1		1	
Drawing					
Architectural Design }	125		20		20
Freehand Drawing... }	49 _a		2		2
Modelling.....	50 _a		2		2

Third Year.

Vacation Work.....	220				
Descriptive Geometry.....	131				
Acoustics.....	195	1	1½		
History of Architecture....	42	1		1	
History and Principles of Ornament.....	44	1		1	
Architectural Design.....	47	1		1	
Building Materials.....	53	2		2	
Theory of Structures.....	19	2			
Cements and Concrete.....	21			1	
Limited Companies.....	67	1		1	
Strength of Materials.....	14				2
Photography.....	199	1	1½		1½
Modelling.....	50 _b		2		2
Water Color Painting.....	49 _b		2		2
Drawing			9		
Architectural Design }	130		7		25

Fourth Year.

Strength of Materials.....	22	1		1	6
Structural Design.....	51	1	1	1	1
Electricity.....	140	1		1	
Heating and Ventilating....	54 _a	1		1	
Sanitary Science.....	54	1		1	
Contracts and Specifications	68			1	
Thesis.....	219		3		3
Drawing from life.....	49 _c		2		2
Modelling from life.....	50 _c		2		2
And one of					
(l) Architectural Design.	48	2	20	2	20
(m) Architectural Engineering.....	216	4	22	3	26

5. DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.

The course in Analytical and Applied Chemistry is designed to furnish instruction suitable for those students who intend to practise chemistry as a profession, either as analysts or as works chemists.

SUBJECTS OF INSTRUCTION.**First Year.**

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Electricity and Magnetism..	135	1		1	
Biology.....	61, 62	2		2	6
Accounts.....	65	1		1	
Electric Circuits.....	136	1		1	
Elementary Chemistry.....	75	2		2	
Elementary Mineralogy....	157	2			
Inorganic Chemistry.....	77			1	
German.....	218	1		1	
Drawing.....	119		4		4
Electrical Laboratory.....	137	1½	1	1½	
Chemical Laboratory.....	78		10		14
Mineralogical Laboratory...	158		4		3

Second Year.

Electricity.....	138, 139	2	2½		2½
Engineering Chemistry.....	85			1	
Industrial Chemistry.....	86	1		1	
Organic Chemistry.....	88	2		2	
Physical Chemistry.....	90	2		2	
Inorganic Chemistry.....	79	1			
Analytical Chemistry.....	80	1		1	
Optics.....	197	1	1½		
Hydrostatics.....	196			1	1½
Geology.....	150	1		1	
*Biology or {	63				3
Calculus {	190	2		2	
German.....	218	1		1	
Banking and Finance.....	66	1		1	
Chemical Laboratory.....	89		15		16
Metallurgy.....	183			1	
Mineralogical Laboratory...	162				1

*Students should consult the head of the Department of Chemistry as to the option to be selected.

Third Year.

Subjec	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Electrochemistry.....	101, 102	2	3		
Engineering Chemistry...	94	1		1	
Industrial Chemistry.....	95	1		1	
Organic Chemistry A.....	97	2		2	
Organic Chemistry B.....	98			1	
Chemical Plant.....	96	1		1	
Ferro-Metallurgy.....	181	1		1	
Metallurgy.....	184	1		1	
Economic Geology.....	151	2		2	
Crystallography.....	167	1		1	
Limited Companies.....	67	1		1	
German.....	218	1		1	
Chemical Laboratory.....	91		16		20
Assaying.....	173		1½		1½
Heat.....	198	1	1½		
Electricity.....	140			1	

Fourth Year.

Inorganic Chemistry.....	103	1	3	1	
Organic Chemistry.....	104	1	15	1	
Cost-keeping, etc...	69	1		1	
German.....	218	1		1	
Thesis.....	219				
And one of					
(h) Electrochemistry.....	108, 109	2	14	2	32
(i) Industrial Chemistry.	106, 107	1	15	1	33
(j) Sanitary and Forensic Chemistry and Bac- teriology.....	64, 110, 111	1	15	2	32
(k) Metallurgy.....	180	2	14	1	33

6. DEPARTMENT OF CHEMICAL ENGINEERING.

In many industries there is a demand for a man who combines the technical knowledge of the mechanical engineer with a knowledge of chemistry. It is to fill this want that the course in Chemical Engineering is designed.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Magnetism and Electricity.	135				
Electric Circuits.....	136			2	
Elementary Chemistry.....	75	2		2	
Inorganic Chemistry.....	77			1	
German.....	218	1		1	
Accounts.....	65	1		1	
Drawing.....	120		17		19
Electrical Laboratory.....	137		1½		1½
Chemical Laboratory.....	76				3

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Strength of Materials.....	13	2		2	
Electricity.....	138, 139	2	2½	2	2½
Engineering Chemistry....	85			1	
Industrial Chemistry.....	86	1		1	
Organic Chemistry.....	88	2		2	
Physical Chemistry.....	90	2		2	
Inorganic Chemistry.....	79	1			
Optics.....	197	1	1½		
Hydrostatics.....	19			1	1½
German.....	218	1		1	
Banking and Finance.....	66	1		1	
Drawing.....	123		13		14
Chemical Laboratory.....	84		6		6
Metallurgy.....	183			1	
Machine Details.....	28a			1	

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term.	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work.....	220				
Theory of Structures.....	19	2			
Thermodynamics.....	33, 35	2	2	2	1½
Electrochemistry.....	101, 102	2	3		
Engineering Chemistry....	94	1		1	
Organic Chemistry A.....	97	2		2	
Organic Chemistry B.....	98			1	
Industrial Chemistry.....	95	1		1	
Analytical Chemistry.....	80	1		1	
Metallurgy.....	184	1		1	
Ferro-Metallurgy.....	181	1		1	
Chemical Plant.....	96	1		1	
Limited Companies.....	67	1		1	
German.....	218	1		1	
Machine Design.....	27	1	4½	1	4½
Assaying.....	173		1½		1½
Electricity.....	140			1	
Drawing.....	132		4		
Chemical Laboratory.....	92		9		13

Fourth Year.

Hydraulics.....	29a	2		2	
Inorganic Chemistry.....	103	1	3	2	
Organic Chemistry.....	104	1	15	1	
Cost-keeping, etc.....	69	1		1	
Power.....	32a, 141		2		2
German.....	218	1		1	
Thesis.....	219				
And one of					
(h) Electrochemistry.....	108	2	10	2	27
(i) Industrial Chemistry.	106, 107	1	11	1	28
(j) Sanitary and Forensic Chemistry and Bac- teriology.....	64, 110, 112	1	11	2	27
(k) Metallurgy.....	180	1	11	1	28

7. DEPARTMENT OF ELECTRICAL ENGINEERING.

The course in Electrical Engineering is arranged to provide preliminary training for those who would follow any of the various lines of activity connected with electrical industry.

The first two years of the course are devoted to fundamental scientific principles, and incidentally more or less of their application to engineering problems in mechanical, civil and electrical work. Many problems are solved in the drafting rooms by graphical methods. The third year includes further theoretical work, more particular attention being given to electrical and mechanical studies in theory, operation and design. The fourth year is devoted to advanced work in alternating current theory and practice combined with similar study in thermodynamics, hydraulics or electrochemistry.

A large amount of laboratory practice is provided, most of which belongs to the third and fourth years. In this last year most of the time is spent in laboratory investigations and studies resulting therefrom.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' mechanical experience in one of the principal trades connected with Electrical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Magnetism and Electricity.	135	2			
Electric Circuits.....	136			2	
Elementary Chemistry.....	75	2		2	
Modern Language....	217, 218	1		1	
Accounts.....	65	1		1	
Drawing.....	120		20		20
Electrical Laboratory	137		1½		1½

Second Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	121	1		1	
Optics.....	197	1	1½		
Hydrostatics.....	196			1	1½
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Theory of Mechanism.....	25	2		2	
Steam Engines.....	38	1			
Electricity.....	138, 139	2	2½	2	2½
Engineering Chemistry....	85			1	
Organic Chemistry.....	87	1			
Modern Language.....	217, 218	1		1	
Banking and Finance.....	66	1		1	
Drawing.....	124		12		19
Chemical Laboratory.....	81		6		
Machine Details	28a			1	

Third Year.

Vacation Work.....	220				
Mechanics of Machinery...	26	1		1	
Machine Design.....	27	1	3½	1	3½
Hydraulics.....	29, 30	2		2	1
Thermodynamics.....	33, 35	2	2	2	1½
Heat Engines.....	39	1		1	
Electrochemistry.....	101, 102	2	3		
Magnetism and Electricity.	142	2		2	
Alternating Current.....	143	1		1	
Electrical Design.....	145	1	1½	1	3
Electrical Laboratory.....	144		6		6
Engineering Chemistry....	94	1		1	
Ferro-Metallurgy.....	181	1		1	
Limited Companies.....	67	1		1	

Fourth Year.

Applied Electricity.....	146, 147	3	18	3	18
Cost-keeping, etc.....	69	1		1	
Thesis.....	219				
And one of.....					
(d) Hydraulics.....	31, 31a, 32	3	10	3	10
(g) Thermodynamics....	36, 36a, 37	3	10	3	10
(h) Electrochemistry.....	108, 109	2	10	2	10

8. DEPARTMENT OF METALLURGICAL ENGINEERING.

The object of this course is to provide instruction and preliminary training for those who intend to become metallurgical engineers. Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' experience in metallurgical work.

SUBJECTS OF INSTRUCTION.**First Year.**

Subject	No	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Chemistry.....	75, 77	2		3	
Chemical Laboratory.	78		9		9
Accounts.....	65	1		1	
Mineralogy.....	157, 168	2	1		1½
Drawing.....	120		10		10

Second Year.

Calculus	190	2		2	
Descriptive Geometry.....	121	1		1	
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Hydrostatics.....	196			1	1½
Electricity.....	140			1	
Steam Engines.....	38	1			
Magnetism and Electricity.	135	2			
Chemistry.....	79, 80, 85	2		2	
Physical Chemistry.....	90	2		2	
Banking and Finance.....	66	1		1	
Chemical Laboratory.....	93		11		9
Mineralogy.....	169		1		1
Mining.....	170, 171	1	3	1	
Metallurgy.....	183, 185	1		2	2
Spanish.....		1		1	
Drawing.....	121		7		7

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Theory of Mechanism.....	25	2		2	
Hydraulics.....	29a	2		2	
Theory of Structures.....	19	2			
Limited Companies.....	67	1		1	
Chemical Laboratory.....	93		5		5
Electrochemistry.....	101, 102	2	3		
Ferro-Metallurgy.....	181	1		1	
Cement and Concrete.....	21			1	
Assaying.....	173	1	3		3
Metallurgy.....	186	1	1	4	7
Mining.....	172			2	3
Ore Dressing.....	177	1		1	
Heat.....	198	1	1½		
Drawing.....			4		

Fourth Year.

Thermodynamics.....	34	1		1	
Heat Engines.....	39	1		1	
Ore Dressing.....		2	2	2	4
Assaying.....	174			1	3
Cost-Keeping.....	70	1		1	
Plant Design.....		1	4	1	4
Power.....	32a, 39a, 141		3		3
Metallurgy.....	186a	2	9	2	9
Thesis.....			4		4

OUTLINE OF COURSES OF INSTRUCTION.

APPLIED MECHANICS.

10. STATICS:—*T. R. Loudon.*

Departments 1, 2, 3, 4, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with forces in a single plane, and concerns chiefly the calculation of tension, compression and shearing stresses in frame structures and solid beams. It also deals with the consideration of problems relating to friction.

11. DYNAMICS:—*J. McGowan.*

Departments 1, 2, 3, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with bodies having motion of translation in one plane; also with relative motion, momentum, work and energy.

Text book:—Tutorial Dynamics—Briggs and Bryan.

12. DYNAMICS OF ROTATION:—*W. J. Loudon.*

Departments 1, 2, 3, 7 and 8, II Year; 1 hour per week; both terms.

This course covers angular motion, including moments of inertia, simple harmonic motion, the pendulum, centres of mass, suspension and percussion, the simple theory of the fly-wheel and the governor.

Text book:—Dynamics of Rotation—Worthington.

13. STRENGTH OF MATERIALS:—*P. Gillespie.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; 2 hours per week; both terms.

In this course the strength and elasticity of materials are mathematically treated. The stresses in such elements of structures as the tie rod, the beam, the strut and the member subjected to shear are investigated and the elementary principles of design established. In the lecture and drafting rooms through numerous problems involving the design of simple beams, columns, riveted connections, etc., these principles are exemplified. The work includes also the discussion of eccentric loading, suddenly applied loads and repeated stresses.

Reference Book:—Mechanics of Materials—Merriman.

14. STRENGTH AND ELASTICITY OF MATERIALS:—*J. McGowan.*

Departments 1, 3 and 4, III Year; 2 hours per week; one term.

This course is intended to give the student an introduction to the experimental study of the strength and elasticity of materials. It is intended that he shall acquire some familiarity with the construction and operation of testing machines and with the properties of the ordinary building materials.

Reference Book:—Laboratory Instructions, Department of Applied Mechanics, U. of T., 1913.

16. THEORY OF STRUCTURES:—*J. McGowan.*

Departments 1 and 3, IV Year; 2 hours per week; both terms.

The work taken up in this course of lectures consists in swing bridges, arches, suspension bridges and some special features in column construction.

Reference Books:—Modern Framed Structures—Johnson. Typical Steel Railway Bridges—Thomson.

17. STRENGTH AND ELASTICITY OF MATERIALS:—*P. Gillespie.*

Departments 1, 3 and 4, IV Year; a laboratory course of about 11 hours per week.

This course of experiments is intended to give the student practice in investigating the elastic and physical properties of iron, steel, concrete, timber and other building materials.

Reference book:—Materials of Construction—Johnson.

18. THEORY OF STRUCTURES:—*C. R. Young.*

Department 1, III Year; 2 hours per week; both terms.

The work of the first term comprises a thorough discussion of restrained, continuous and trussed beams, multiple beam and box girders, plate girders and certain practical aspects of column design. A number of designs of girders and structural details are worked out in the class and drafting rooms.

The second term is given chiefly to the design of a riveted truss highway span and a riveted truss railway span, the complete designs being made in the lecture and drafting rooms.

19. THEORY OF STRUCTURES:—*C. R. Young.*

Departments 2, 3, 4, 6 and 8, III Year; 2 hours per week; first term.

The work is practically the same as that for Department 1 in the first term.

Text books:—Modern Framed Structures—Johnson, Bryan and Turneaure; Theory of Structures—Spofford; Bridge and Structural Design—Thomson; Aids in Structural Design—Young; Carnegie Pocket Companion; Cambria Steel.

20. FOUNDATIONS, RETAINING WALLS AND DAMS:—*P. Gillespie.*

Department 1, IV Year; 1 hour per week; both terms.

This course of lectures is devoted to the design of the structures mentioned. Preparatory to the discussion of the practical aspects of the subjects, and in order to gain familiarity with the fundamental principles involved, a part of the first term is given over to the consideration of the theory of compound stress. The most approved forms of construction of retaining walls, footings, abutments, piers and dams are then described, and typical designs are worked out in the class and drafting rooms.

Text books and books of reference:—Retaining Walls for Earth—M. A. Howe; Walls, Bins and Grain Elevators—M. S. Ketchum; A Treatise on Masonry Construction—I. O. Baker; Design and Construction of Dams—E. Wegmann.

21. CEMENTS AND CONCRETE:—*P. Gillespie.*

Departments 1, 4 and 8, III Year; 1 hour per week; second term.

The manufacture, testing and use of Portland cement and the fundamentals of the theory of reinforced concrete are discussed in this course of lectures.

22. REINFORCED CONCRETE:—*P. Gillespie.*

Departments 1, 3 and 4, IV Year; 1 hour per week.

The theory of the strength of reinforced concrete elements including the beam, the slab, the T-beam and the column, is continued in this course.

The analysis of the monolithic arch by the elastic theory is discussed, and the student is required in the drafting room to apply his knowledge to the design of simple structures.

Reference books:—Principles of Reinforced Concrete Construction—Turneure and Maurer; Concrete, Plain and Reinforced—Taylor and Thompson.

23. IRON AND STEEL:—*T. R. Loudon.*

Taken by students in IV Year, who select the options (c) Structural Engineering, and (e) Strength and Elasticity of Materials.

Metallography—Mechanical Treatment, Heat Treatment; Metallurgy; Physical Properties; 1 lecture per week. Laboratory, second term.

24. MILL BUILDING DESIGN:—*C. R. Young.*

Departments 1 (*Structural Engineering Option*), 3 and 4 (*Architectural Engineering Option*), IV Year; 1 hour per week; both terms.

The structural problems involved in the design of mill buildings of timber, steel and reinforced concrete are discussed in this course of lectures. Consideration is given to the various types of buildings, the conditions governing their choice and the details of construction in different materials. Designs of portions of mill buildings are worked out in the class and drafting rooms.

Text books:—Mill Buildings—Tyrrell; Steel Mill Buildings—Ketchum.

24a. MISCELLANEOUS STRUCTURES:—*C. R. Young.*

Department 1 (*Structural Engineering Option* and *Sanitary and Highway Engineering Option*), IV Year; 1 hour per week, second term.

In this course of lectures the application of theoretical principles to the design of a variety of structures is made. Among those structures discussed are transmission line towers, elevated tanks and their supporting towers, standpipes, large pressure pipes, sewers, culverts, small highway bridges, sub-surface tanks and tall chimneys. Whenever possible the lecture work is followed up by designs in the drafting rooms.

MACHINERY.

25. THEORY OF MECHANISM:—*J. H. Parkin.*

Departments 3 and 7, II Year; Department 8, III Year; 2 hours per week; both terms.

This course of lectures treats of the motions of machines, the latter being assumed to be of sufficient strength to resist acting forces. The formation of machines is dealt with in a general way and the efficiency of machines considered. Investigations of the velocities of points and links are made. The design of gear teeth and the application of trains of gears are taken up, also problems in static equilibrium.

Problems are worked out in the drafting room in which the methods given are employed.

Text book:—Theory of Machines—Angus.

26. MECHANICS OF MACHINERY:—*J. H. Parkin.*

Departments 3 and 7, III Year; 1 hour per week; both terms.

In this course the questions dealt with are the construction of acceleration diagrams, the determination of the accelerations of various parts of machines, the kinetic energy of machines, the effect of the weights and accelerations of parts on the velocity of the fly-wheel and the proper weight of the latter to fulfil given conditions. The theory of various forms of governors is fully taken up and also the efficiency of machines.

Text book:—Theory of Machines—Angus.

27. MACHINE DESIGN—*J. H. Billings.*

Departments 3 and 7, III Year; 2 hours per week; both terms. Department 6, III Year; first term only.

Using the previous work in mechanics and kinematics as a groundwork, the lectures in this course deal with the design of shafting, journal bearings, gearing, flywheels, belting, springs, clutches, ball and roller bearings, machine supports, framing, etc.

The problems worked out in the design room are planned to include the principal parts of some complete machine such as an engine or machine tool.

The design work occupies $7\frac{1}{2}$ hours per week for Department 3, $4\frac{1}{2}$ hours for Department 6 and $3\frac{1}{4}$ hours for Department 7.

28. ADVANCED MACHINE DESIGN—*J. H. Billings.*

Department 3, IV Year; lectures, 1 hour per week; design, 4 hours per week; both terms.

The work of this course gives practice in the design of complete machines from specifications, having regard for durability, safety, cost of materials, and difficulties in casting, machining and assembling. Mechanisms are developed to give required motions and control.

The lectures deal also with compound stress, helical gearing and questions of vibration and stability. Machine tools, automatics and process machinery are discussed as far as time will allow.

28a. MACHINE DESIGN—*J. H. Billings.*

Departments 3, 6 and 7, II Year; 1 hour per week; second term.

A course of lectures dealing principally with machine fastenings and certain problems in the proportioning of parts to resist simple and compound stresses.

HYDRAULICS.

29. HYDRAULICS—GENERAL COURSE:—*J. J. Traill.*

Departments 1, 3 and 7, III Year; 2 hours per week.

This is an introductory course of lectures in hydraulics, and is devoted to the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of discharge by various methods, such as orifices and weirs, the conditions of flow obtaining in open channels, artificial and natural, and in pipes flowing partially full, together with other kindred subjects.

The object of this course is to provide the student with a good working knowledge of the fundamental principle of hydraulics, such as is useful in practical work, and is necessary to the intelligent investigation of more advanced problems, such as the design of turbines, water-wheels and power plants generally.

29a. HYDRAULICS:—*J. J. Traill.*

Departments 2 and 8, III Year; Department 6, IV Year.

This course deals with the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of water by various methods, the conditions of flow in open channels and in pipes partly full. This work is followed by a brief discussion on pumps and other hydraulic machines.

30. HYDRAULIC LABORATORY:—*J. J. Traill.*

Department 1, III Year; 3 hours per week; one term. Departments 3 and 7, III Year; 4 periods of 3 hours each.

The work in this course is intended to illustrate the lecture course given in Hydraulics and to give the student some working acquaintance with the formulas met with in practice. Experiments are made to determine the coefficients for an orifice and the coefficients of discharge for a weir. The results of these experiments are used in measuring the discharge in subsequent experiments on meters and for the determination of hydraulic resistances in various cases of flow in pipes.

31. HYDRAULICS:—*J. J. Traill.*

Departments 1, 3 and 7, IV Year; 1 hour per week; both terms.

Following up the third year course in this subject the theory already acquired is applied to the solution of problems connected with branched pipes, water-mains discharging at various points along their length, the effect of a dam on the water level at any point on a stream and numerous other problems. The applications of hydrographic data and precipitation, evaporation and run-off relations are also considered.

31a. HYDRAULICS:—*R. W. Angus.*

Departments 1, 3 and 7, IV Year; 2 hours per week, both terms.

The most important question considered and to which most of the lectures are devoted is the theory of turbines and centrifugal pumps, the effect of the design on the speed, discharge power and efficiency being fully taken up.

Text books:—Centrifugal Pumps—Loewenstein and Crissey; Hydraulics—Merriman; Water Power Engineering—Mead.

32. HYDRAULICS:—*R. W. Angus, J. J. Traill.*

Departments 1, 3 and 7, IV Year; about 10 hours per week.

A laboratory course devoted to experimental work on turbines of various types and centrifugal and turbine pumps and other similar devices. This experimental work is arranged to illustrate the lectures on turbine and pump design. The experiments are made on two large turbine pumps used in the laboratory supply, as well as on apparatus specially designed for instruction. Various methods of measuring water-power and the efficiency of machines are also given.

32a. POWER:—*J. J. Traill.*

Departments 2, 6 and 8, IV Year; 24 hours.

A laboratory course of experiments on orifices, weirs, turbines, meters, pumps, etc.

32b. HYDRAULICS:—*J. J. Traill.*

Department 1, IV Year.

This is a lecture and laboratory course of six hours per week, first term, dealing with the flow of water in pipes and open channels, measurement of water, and pumps and pumping.

HEAT ENGINES.

33. THERMODYNAMICS:—*R. W. Angus.*

Departments 3, 6 and 7, III Year; 2 hours per week.

A lecture course in which the subject is treated in such a way as to make it of practical value and give a working acquaintance with the principles on which it is based. After the elementary ideas have been given and the proofs of the properties of Carnot's cycle, applications of the subject are made to the perfect gas and to saturated steam and to the various types of engines. Temperatures are taken from the air thermometer.

34. THERMODYNAMICS:—*R. W. Angus.*

Departments 1, 2 and 8, IV Year; 1 hour per week; both terms.

This course is especially designed to give the student a working knowledge of thermodynamics as applied to the perfect gas and steam so that he will be able to understand clearly the action of air compressors, steam engines, etc. After deducing general principles, the efficiency of compressed air transmission and the relative merits of different types of compressors are discussed. The steam engine and boiler are also discussed.

35. THERMODYNAMIC AND MECHANICAL LABORATORY:—*L. M. Arkley.*

Department 3, III Year; 2 hours per week, first term; 3 hours per week, second term. Departments 6 and 7, III Year; 2 hours per week, first term; 1½ hours per week, second term.

This laboratory course is designed to assist in a clearer understanding of thermodynamics, machine design and mechanics of machinery. The work in thermodynamics consists in the setting of slide valves, indicating engines measuring the brake horse-power, simple engine and boiler tests and the testing of gas and gasoline engines under various conditions. The mechanical laboratory work deals with the efficiency of belts and ropes as well as of several machines of simple construction. An examination of lubricating oils is also made by means of oil testing machines and other well-known devices. Experiments are also made on the balancing of reciprocating and rotating masses

36. THERMODYNAMICS:—*R. W. Angus.*

Departments 3 and 7, IV Year; 2 hours per week; both terms.

This is a continuation of the introductory course, the subject being here treated from a general standpoint and the idea of entropy and of the absolute scale of temperatures being introduced. The course includes the treatment of saturated and superheated vapours, gases, the flow of fluids, chimney and boiler efficiency and the theory of various engines and other appliances including air compressors, refrigerating machines, and injectors.

Text book:—*Thermodynamics—Peabody.*

36a. THERMODYNAMICS:—*L. M. Arkley.*

Departments 3 and 7, IV Year; 1 hour per week, both terms.

Steam Power Plants. This course follows in logical order the courses on heat engines given in the second and third years. In it a study of the prime movers and auxiliary apparatus required in a power plant is made in such a manner as to indicate the proper choice of equipment under various conditions of operation.

37. THERMODYNAMICS:—*L. M. Arkley, J. H. Parkin.*

Departments 3 and 7, IV Year; about 10 hours per week.

The work in this year is a continuation and extension of the work covered in the third year laboratory course. Careful tests are made of engines of various types, such as simple, tandem and cross-compound steam engines; steam turbines; refrigerating machines; air engines; injectors and steam pumps, etc.; and an application is made of Hirn's analysis and the entropy diagram to the results obtained. A complete set of experiments is made on each machine and the result plotted so as to show clearly to the student the effect of various alterations in the adjustment of the engine on the resulting efficiency.

Several modern gas and gasoline engines and a gas producer give ample opportunity for the study of this type of engine, and facilities are provided for sampling the gas supply and exhaust.

Two experimental stacks and three boilers enable results to be obtained on boiler efficiency and chimney draft.

38. STEAM ENGINES:—*L. M. Arkley.*

Departments 3, 7 and 8, II Year; one hour per week; second term.

This course of lectures includes a discussion of the principles of action of the steam engine; also the theory and design of various simple forms of valve gears used in the operation of such engines.

39. HEAT ENGINES:—*L. M. Arkley.*

Departments 3 and 7, III Year; Department 8, IV Year; one hour per week, both terms.

This course in heat engines is intended for students in Mechanical, Electrical and Metallurgical Engineering, to be supplementary to the general course of lectures in thermodynamics.

The principal commercial forms of heat engines are dealt with in a more or less descriptive manner; special attention is given to considerations affecting the design of the ordinary forms of steam engines, gas engines and oil engines.

39a. POWER:—*L. M. Arkley.*

Departments 1, 2 and 8, IV Year; 21 hours.

A course of experiments with steam and gas engines, compressed air, etc.

ARCHITECTURE.40. HISTORY OF ARCHITECTURE:—*H. H. Madill.*

Department 4, I Year; one hour per week; both terms.

In this course the development of architecture is treated very briefly and in an elementary manner, from the Pyramids of Egypt to the present, laying special emphasis on the Egyptian, Grecian and Western Asiatic work. The antique Greek and Roman orders are studied, and the students are required to make rendered drawings in the studio of certain orders and elements. An attempt is made to develop the student's sense of proportion, and in the latter part of the second term he is required to study a simple problem in design.

41. HISTORY OF ARCHITECTURE:—*H. H. Madill.*

Department 4, II Year; one hour per week; both terms.

The Classical, Early Christian, Byzantine and Romanesque styles of architecture are studied with the aid of the lantern. The student is required to become acquainted with the best examples in these styles in order that his sense of proportion and his taste may be developed and his knowledge of the different elements extended.

42. HISTORY OF ARCHITECTURE:—*A. Wellesley McConnell.*

Department 4, III Year; one hour per week; both terms.

In this course the work of the previous year is continued, with the study of Gothic and the Renaissance.

43. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*

Department 4, II Year; one hour per week; both terms.

In this course the development of Ornament is traced from the beginning through Egyptian, Assyrian, Grecian, Roman, Byzantine, Romanesque and Moresque styles. An attempt is made to analyze ornament of the best periods and to systematize the principles followed in form and color. The development and types of mouldings are also studied.

44. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*

Department 4, III Year; one hour per week; both terms.

A continuation of the course in Ornament given to the Second Year. Instruction is given in lectures with the aid of the stereopticon. The students are required to become familiar with the characteristics and forms of the ornament used in the Gothic and Renaissance styles.

45. ORDERS OF ARCHITECTURE:—*A. Wellesley McConnell.*

Department 4, II Year; one hour per week; both terms.

Lectures on the Five Orders of Architecture, their affiliated forms and the other elements used in design. Simple problems in elementary design involving the use of the orders and other elements are set from time to time.

46. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, II Year; one hour per week; both terms.

This course is given by means of individual instruction in the classroom by criticisms of the solutions of different problems set during the year and by a series of lectures. It is in this course that the student begins the serious study of design; continued practice in architectural drawing and rendering affords the training necessary to make the student a proficient draughtsman.

47. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, III Year.

Theory and practice of Design.

This course is given by individual instruction in the studio and by lectures. The greater part of the course is devoted to problems in design, and forms a continuation of the course given in the preceding year.

48. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, IV Year.

The entire course is devoted to advanced academic training in designing the more monumental classes of buildings. The student is required to design and submit sketches and working drawings of some subject to be selected by himself.

48a. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, IV Year; Architectural Engineering Option.

A short course of lectures and studio work referring especially to the artistic side of the design of commercial buildings.

49. FREEHAND DRAWING AND WATER COLOR PAINTING:—*C. W. Jefferys*.
Department 4, I Year; 2 hours per week; both terms.
Drawing from still life objects. Primary freehand perspective.
Primary pencil and pen and ink rendering.
- 49a. Department 4, II Year; 2 hours per week; both terms.
Drawing and monochrome painting from still life.
Drawing from the cast.
Pencil, pen and ink, and monochrome rendering.
Primary water color.
Drawing from landscape and natural objects.
- 49b. Department 4, III Year; 2 hours per week; both terms.
Drawing from the cast.
Water color from still life. Water color rendering.
Drawing from landscape and natural objects.
Students who are sufficiently advanced are admitted to the Fourth
Year Life Drawing Class.
- 49c. Department 4, IV Year; 2 hours per week; both terms.
Water color from still life and from landscape.
Drawing from life.
Water color rendering.
50. MODELLING:—*J. L. Banks*.
Department 4; I Year; 2 hours per week; both terms.
The Orders. Synopsis of styles.
- 50a. Department 4; II Year; 2 hours per week; both terms.
The styles elaborated.
Problems in figures and in relation to architecture.
- 50b. Department 4; III Year; 2 hours per week; both terms.
Styles continued.
Problems, combination of figure, ornament and architecture, and
their relative values.
- 50c. Department 4; IV Year; 2 hours per week; both terms.
Modelling from life.
Anatomy.
Composition of groups.
51. STRUCTURAL DESIGN:—*C. R. Young*.
Departments 1 (*Structural Engineering Option*) and 4, IV Year; 1 hour
per week; both terms.
This course of lectures is devoted to the problems connected with the
structural design of buildings of timber, steel and reinforced
concrete. The various structural elements, such as the floors,
columns, footings, walls and wind bracing, are fully discussed,
and portions of typical buildings are designed in the class and
drafting rooms.

Text books:—Architectural Engineering—Freitag; Steel Construction—Tucker; Structural Details—Jacoby; Architects' and Builders' Pocket Book—Kidder.

52. BUILDING MEASUREMENT:—*C. H. C. Wright.*

Department 4, I Year; 1 hour per week; both terms.

In this course of lectures the principles of measurements and mensuration with special reference to buildings will be discussed. With this is combined $4\frac{1}{2}$ hours per week practice in measurements of existing buildings, quantities, etc.

53. BUILDING MATERIALS:—*C. H. C. Wright.*

Department 4, III Year; 2 hours per week; both terms.

The structural and aesthetic value of the various building materials.

54. SANITARY SCIENCE:—*C. H. C. Wright.*

Department 4, IV Year; 1 hour per week; both terms.

Modern plumbing, its design and installation.

54a. HEATING AND VENTILATING:—*C. H. C. Wright.*

Department 4, IV Year; 1 hour per week; both terms.

The design of different systems, where they should be used, heating specifications, etc.

ASTRONOMY AND GEODESY.

55. ASTRONOMY, ELEMENTARY:—*C. A. Chant.*

Department 1, II Year; 1 hour per week; both terms.

A course in descriptive Astronomy, explaining the ordinary astronomical terms, and describing the various celestial bodies and their motions. In the evenings opportunity will be given for identifying the stars and for observing with telescopes.

Text book:—New Astronomy—D. P. Todd.

56. ASTRONOMY AND GEODESY:—*L. B. Stewart.*

Department 1, III Year; 2 hours per week.

The course of lectures deals with the determination of time, latitude, longitude and azimuth, by methods adapted to the use of the surveyor's transit and the sextant. It is designed to fulfil the requirements of the final examinations for Ontario and Dominion Land Surveyors.

In Geodesy an account is given of the principles and methods of a secondary triangulation survey, also of the principles involved in the North-West system of survey.

Text books:—Practical Astronomy as applied to Geodesy and Navigation—Doolittle; Nautical Almanac, 1918.

57. FIELD WORK:—*L. B. Stewart, S. R. Crerar.*

Department 1, III Year; about 1 hour per week; first term.

The practical work in this subject comprises observations in the field with the transit and sextant for the determination of time, latitude and azimuth by the methods described in the lectures.

58. ASTRONOMY (Advanced):—*L. B. Stewart.*

Department 1, IV Year; 2 hours per week.

The lecture course in this subject comprises the theory and adjustment of the instruments used in connection with a geodetic survey; the methods of taking and reducing observations for time, longitude, latitude, and azimuth, with the precision required on such a survey; and other matters relating to these subjects.

59. GEODESY AND METROLOGY:—*L. B. Stewart.*

Department 1, IV Year; 2 hours per week.

The lecture course includes a description of the methods of measuring base lines and the angles of a triangulation; the geometry of the spheroid with applications to geodetic problems; the computation of geodetic positions; the solution of large triangles on the earth's surface, and the adjustment of a triangulation; trigonometric and precise spirit levelling; the determination of the figure of the earth by arc measurements, and by the pendulum; the theory of map projections, etc.

60. ASTRONOMY, GEODESY AND METROLOGY:—*L. B. Stewart.*

Department 1, IV Year; about 23 hours per week.

The practical work in the above subjects includes the observation of meridian transits for time and longitude determinations, and of prime vertical transits for latitude, with the astronomical transit instrument; the observation of meridian zenith distances of stars, and of azimuths at elongation for latitude, with the alt-azimuth; theodolite observations for azimuth; observations for latitude with the zenith telescope; the investigation of the constants of the instruments used, and the reduction of all observations; the measurement of a base line with the steel tape and with invar wires, and the determination of the constants of the tape; the measurement of the angles of a triangulation and the adjustment of the angles of network of triangles, etc.

BIOLOGY.

61. ELEMENTARY BIOLOGY:—*B. A. Bensley.*

Department 5, I Year; optional in Department 1, III Year; 2 hours per week; both terms.

A course of two lectures a week on the principles of biology, as applied to animals. For reference: Bigelow, Applied Biology; Calkins, Biology.

62. ELEMENTARY ZOOLOGY:—*W. A. Clemens.*

Department 5, I Year; 3 hours per week; second term.

An elementary laboratory course on the nature and identification of animal tissues and products, with microscope practice.

63. ADVANCED BIOLOGY:—*J. H. Faull.*

Department 5, II Year.

A course of instruction of 3 hours per week, second term, on the Morphology and Physiology of Bacteria, Moulds and Yeast Fungi.

63a. ELEMENTARY BIOLOGY:—*E. M. Walker.*

Department 1, IV Year.

An Elementary Course of Laboratory work and demonstrations in General Biology, six hours per week, first term.

64. BACTERIOLOGY:—*J. G. Fitzgerald.*

Departments 1, 5 and 6, IV Year; a lecture and laboratory course of 8 hours per week, second term, on elementary bacteriology.

BUSINESS.

65. ACCOUNTING:—*W. S. Ferguson.*

All Departments, I Year; 1 hour per week; both terms.

The principles of accounting; illustrated by typical accounts.

66. BANKING AND FINANCE:—*M. A. Mackenzie.*

All Departments, II Year; 1 hour per week; both terms.

Money and the instruments of credit; stocks and bonds.

67. LIMITED COMPANIES:—*A. R. Clute.*

All Departments, III Year; 1 hour per week; both terms.

Partnerships; the history and development of the limited liability company; the Companies Acts; Company finance.

68. CONTRACTS AND SPECIFICATIONS:—*C. R. Young.*

Departments 1 and 4, IV Year; 1 hour per week; second term.

This course of lectures deals with the fundamental principles of contract and specification writing. The critical examination of typical specifications and agreements by the class forms an essential feature of the instruction.

Text books:—Engineering Contracts and Specifications—Johnson; Elements of Specification Writing—Kirby; Specifications and Contracts—Wadell-Wait; Principles of Specification and Agreement Writing—Young.

69. COST-KEEPING, ETC.:—*J. W. Bain, H. W. Price, L. M. Arkley.*

Departments 3, 5, 6 and 7, IV Year.

Works management, mechanical specifications, analysis of costs, reports.

70. COST-KEEPING:—*H. E. T. Haultain, G. A. Guess.*

Departments 2 and 8, IV Year.

Mining and Metallurgical costs and cost keeping methods, ore contracts, smelter settlements, practical problems.

CHEMISTRY.

75. **ELEMENTARY CHEMISTRY:**—*E. G. R. Ardagh.*
All Departments, I Year; 2 hours per week; both terms.
A lecture course in elementary chemistry dealing with the metals and non-metals, with experimental illustrations.
76. **ELEMENTARY CHEMISTRY:**—*M. C. Boswell.*
Departments 2 and 6, I Year; 3 hours per week; second term.
A laboratory course to illustrate the use of the sensitive balance, to verify some of the laws which form the basis of the science, and to serve as an introduction to quantitative laboratory methods.
Instruction given as required before each period.
77. **INORGANIC CHEMISTRY:**—*W. H. Ellis.*
Departments 5, 6 and 8, I Year; 1 hour per week; second term.
A lecture course on the elements and important inorganic compounds, supplementing Course 75.
Text book:—Introduction to General Inorganic Chemistry—Alex. Smith.
78. **INORGANIC CHEMISTRY:**—*L. J. Rogers.*
Departments 5 and 8, I Year; about 17 hours per week; both terms.
A laboratory course of quantitative experiments illustrating the use of the sensitive balance, and confirming the fundamental laws of chemistry; qualitative inorganic analysis; quantitative analysis of pure salts; inorganic preparations; molar weight determinations.
Text book:—Manual of Chemical Analysis, Qualitative and Quantitative—Newth.
79. **INORGANIC CHEMISTRY:**—*J. W. Bain.*
Departments 2, 5, 6 and 8, II Year; 1 hour per week; first term.
A lecture course on the chemistry of the metals; a continuation of Course 75.
80. **ANALYTICAL CHEMISTRY:**—*E. G. R. Ardagh.*
Departments 5 and 8, II Year; Departments 2 and 6, III Year; 1 hour per week; both terms.
A lecture course on the principles of chemical analysis; select gravimetric and volumetric methods; technical analysis.
81. **ANALYTICAL CHEMISTRY:**—*E. G. R. Ardagh.*
Departments 1, 2, 3 and 7, II Year; 6 hours per week; one term.
Laboratory practice in elementary qualitative and quantitative analysis.
Text book:—A Smaller Chemical Analysis—Newth.
82. **ANALYTICAL CHEMISTRY:**—*J. W. Bain.*
Department 2, II Year; 3 hours per week; both terms.
A laboratory course in the gravimetric determination of metals and acids, with elementary volumetric analysis.
Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

83. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
 Departments 5 and 8, II Year; 14 hours per week; 17 weeks.
 A laboratory course comprising gravimetric and volumetric methods, acidimetry and alkalimetry.
 Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.
84. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
 Department 6, II Year; 6 hours per week; both terms.
 A laboratory course in qualitative and elementary quantitative chemical analysis; inorganic preparations.
 Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.
85. ENGINEERING CHEMISTRY:—*J. W. Bain.*
 Departments 1, 2, 3, 5, 6, 7 and 8, II Year; 1 hour per week; second term.
 A lecture course consisting of a study of the industrial production and application of heat and light, and of the chemistry of fuel and the products of combustion.
86. INDUSTRIAL CHEMISTRY:—*W. H. Ellis.*
 Departments 5 and 6, II Year; 1 hour per week; both terms.
 A lecture course on the manufacture of salts, acids, alkalies and inorganic chemicals.
 Text book:—Inorganic Chemistry—Thorp.
87. ORGANIC CHEMISTRY:—*M. C. Boswell.*
 Departments 1, 2, 3 and 7, II Year; 1 hour per week; first term.
 A lecture course in elementary organic chemistry.
 Text book:—Theoretical Organic Chemistry—Cohen.
88. ORGANIC CHEMISTRY:—*M. C. Boswell.*
 Departments 5 and 6, II Year; 2 hours per week; both terms.
 A lecture course dealing with the aliphatic compounds.
 Text book:—Theoretical Organic Chemistry—Cohen.
89. ORGANIC CHEMISTRY:—*M. C. Boswell.*
 Department 5, II Year; 14 hours per week; 7 weeks.
 A laboratory course in organic preparations in the aliphatic series
90. PHYSICAL CHEMISTRY:—*W. L. Miller.*
 Departments 5, 6 and 8, II Year; 2 hours per week; both terms.
 A course of lectures on the elements of chemical mechanics, and the theory of solutions.
91. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
 Department 5, III Year; 19 hours per week; 16 weeks.
 A laboratory course on the technical analysis of iron and steel alloys, ores, furnace products, ceramic materials, foods, gases, fuels, etc.

92. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Department 6, III Year; 11 hours per week, first term; 13 hours per week, second term.
A laboratory course in volumetric and technical analysis.
93. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Departments 2 and 8, III Year; 5 hours per week; both terms.
A laboratory course on the technical analysis of ores and furnace products.
94. ENGINEERING CHEMISTRY:—*W. H. Ellis and J. W. Bain.*
Departments 1, 2, 3, 5, 6 and 7, III Year; 1 hour per week; both terms.
A lecture course on the application of chemistry to engineering problems; air, water, sewage, the materials of construction, explosives, etc.
95. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, III Year; 1 hour per week; both terms.
A lecture course on petroleum and its products, coal tar and its products, the destructive distillation of wood; fats, oils, soap, sugar, starch, and gums; fermentation industries, etc.
Text book:—Industrial Chemistry—Thorp.
96. CHEMICAL PLANT:—*J. W. Bain.*
Departments 5 and 6, III Year; 1 hour per week; both terms.
A lecture course on the machinery and plant used in chemical manufacturing.
97. ORGANIC CHEMISTRY (A):—*M. C. Boswell.*
Departments 5 and 6, III Year; 2 hours per week; both terms.
A lecture course on the aromatic series.
Text book:—Theoretical Organic Chemistry—Cohen.
98. ORGANIC CHEMISTRY (B):—*F. B. Allan.*
Departments 5 and 6, III Year; 1 hour per week; second term.
A lecture course on stereoisomerism, desmotropism, etc.
99. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 5, III Year; 19 hours per week; 8 weeks.
A laboratory course in organic preparations in the aromatic series; organic analysis.
100. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 6, III Year; 17 hours per week; 4 weeks.
A laboratory course in organic preparations.

101. ELECTROCHEMISTRY:—*W. L. Miller.*

Departments 5, 6, 7 and 8, III Year; Department 2, IV Year; 2 hours per week; first term.

A lecture course on elementary electrochemistry, illustrated by experiments.

102. ELECTROCHEMISTRY:—*W. L. Miller and J. T. Burt-Gerrans.*

Departments 5, 6, 7 and 8, III Year; 3 hours per week; first term.

A laboratory course in quantitative measurements to accompany Course 101.

103. INORGANIC CHEMISTRY:—*J. W. Bain.*

Departments 5 and 6, IV Year; 1 hour per week; first term; 2 hours per week; second term.

A lecture course on chemical theory.

104. ORGANIC CHEMISTRY:—*M. C. Boswell.*

Departments 5 and 6, IV Year; 1 hour per week; both terms.

A lecture course on advanced organic chemistry.

105. ORGANIC CHEMISTRY:—*M. C. Boswell.*

Departments 5 and 6, IV Year.

A laboratory course in advanced organic chemistry.

106. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*

Departments 5 and 6, IV Year; 1 hour per week; both terms.

A lecture course on selected subjects in chemical technology.

107. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*

Departments 5 and 6, IV Year; about 28 hours per week; both terms.

A laboratory course in industrial problems.

108. ELECTROCHEMISTRY:—*J. T. Burt-Gerrans.*

Departments 5, 6 and 7, IV Year; 2 hours per week; both terms.

An advanced lecture course on the theory of solutions and electrolysis, and the application to the practice of electro-deposition and electrolytic refining of metals. The course also includes lectures on the electric furnace with special consideration of efficiency.

Text books:—Electrometallurgy—Borchers; Electrochemistry—Le Blanc; Electrochemistry—Luepke.

109. ELECTROCHEMISTRY:—*W. L. Miller and J. T. Burt-Gerrans.*

Departments 5, 6 and 7, IV Year; about 28 hours per week.

A laboratory course accompanying Course 108.

110. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis.*

Departments 5 and 6, IV Year; 1 hour per week; both terms.

A lecture course on the composition and examination of air, water and food; poisons and their detection.

111. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis*.
Departments 5 and 6, IV Year.
A laboratory course accompanying Course 110.
112. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh*.
Department 2, IV Year, 12 hours per week; first term.
A laboratory course comprising analysis of ores and furnace products.
113. SANITARY CHEMISTRY:—*H. M. Lancaster, E. G. R. Ardagh*.
Department 1, IV Year.
A lecture and laboratory course of about 16 hours per week for one term on water supply, sewage disposal, ventilation, etc.

DESCRIPTIVE GEOMETRY AND DRAWING.

115. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn*.
Departments 1, 2, 3, 6, 7 and 8, I Year; 1 hour per week; both terms.
This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solutions of problems relating to straight lines and planes.
116. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn*.
Department 4, I Year; 1 hour per week; both terms.
This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solution of problems relating to straight lines and planes, special reference being made to the determination of shades and shadows.
117. DRAWING:—*J. R. Cockburn*.
Departments 1 and 2, I Year; about 16 hours per week.
Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; the plotting of original surveys; measured drawings.
118. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell*.
Department 4, I Year; about 15 hours per week.
Copying from the flat, lettering, topography, freehand drawing in black and white, both from copies and models; the graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings. Elements and principles of Architecture.
119. DRAWING:—*J. R. Cockburn*.
Department 5, I Year; about 9 hours per week.
Copying from the flat, lettering, measured drawings.

120. DRAWING:—*J. R. Cockburn.*

Departments 3, 6, 7 and 8, I Year; about 20 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings.

121. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Departments 1, 2, 3, 7 and 8, II Year; 1 hour per week; both terms.

This course of lectures is a continuation of the work taken in the first year with the following additions: Problems relating to curved surfaces, principles of shades, shadows and perspective.

122. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 4, II Year; 1 hour per week; both terms.

This course of lectures is a continuation of the work taken in the First Year with the addition of problems relating to curved surfaces, shades, shadows and perspective.

123. DRAWING:—*J. R. Cockburn.*

Departments 1 and 2, II Year. Department 1, about 14 hours per week. Department 2, about 7 hours per week; both terms.

Coloring and shading as applied to both topographical and construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

124. DRAWING:—*J. R. Cockburn.*

Departments 3 and 7, II Year; about 15 hours per week; both terms.

Coloring and shading as applied to construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics, theory of mechanism and strength of materials; measured drawings; elementary design.

125. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell.*

Department 4, II Year; about 18 hours per week; both terms.

Freehand drawing including monochrome and colors; exercises from the orders of architecture; principles of shades, shadows and perspective; elementary architectural design; problems in descriptive geometry relating to solids bound by curved surfaces; solution of problems in optics and strength of materials; measured drawings.

126. DRAWING:—*J. R. Cockburn.*

Department 6, II Year.

Same as Department 3, with exception that theory of mechanism is not included.

127. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 1, III Year; 1 hour per week; first term.

This course of lectures deals with spherical projections, the principles of mapmaking, and the graphical solution of spherical triangles.

128. DRAWING:—*J. R. Cockburn, C. R. Young.*

Department 1, III Year; about 12 hours per week.

Principles of mapmaking, spherical projection, plotting of original surveys relating to topographical and railway work; problems in theory of construction; original design of various structures; measured drawings.

129. DRAWING:—*J. R. Cockburn.*

Department 2, III Year; 4½ hours per week.

Plotting of original surveys, relating to topographical and railway work and mining; problems in theory of construction; original design; measured drawings.

130. DRAWING:—*J. R. Cockburn, C. R. Young, A. Wellesley McConnell.*

Department 4, III Year; about 16 hours per week, first term; 22 hours per week, second term.

Advanced work in monochrome and colors; problems in shades, shadows and perspective; architectural design; problems in theory of construction, including framed structures.

131. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 4, III Year; 1 hour per week; first term.

Advanced work in shades, shadows and perspective.

132. DRAWING:—*J. R. Cockburn, C. R. Young.*

Departments 2, 3 and 6, III Year; 3 hours per week; both terms.

Problems in design dealing with the theory of structures.

ELECTRICITY.

135. MAGNETISM AND ELECTRICITY:—*H. W. Price.*

Departments 3, 5, 6 and 7, I Year; Department 8, II Year; 2 hours per week; first term.

A course of lectures on general principles relating to magnetism, electricity, electromagnetism, electrostatics, etc., illustrated largely from engineering apparatus.

136. ELECTRIC CIRCUITS:—*W. S. Guest.*

Departments 3, 5, 6 and 7, I Year; 2 hours per week; second term.

This course of lectures concerns chiefly fundamental principles relating to electric circuits, and leads to consideration of such problems as the distribution of electric energy through lines and networks and the division of load between generators.

137. ELECTRICITY:—*W. S. Guest.*

Departments 3, 5, 6 and 7, I Year; 3 hours, alternate weeks; both terms.

A laboratory course of experiments, given in logical order, designed to demonstrate fundamental principles in connection with the generation and flow of currents in electric circuits. The work is associated with the lecture courses, magnetism and electricity, and electric circuits (135, 136).

138. ELECTRICITY:—*T. R. Rosebrugh.*

Departments 3, 5, 6 and 7, II Year: 2 hours per week; both terms.

Deals with the theory of electrical measurements, and detailed study of various methods applicable under different conditions in engineering practice to the measurement of resistance, current, potential difference, power and energy; calibration of commercial measuring instruments. The effect of choice of conditions of measurement on the accuracy of the result is considered.

139. ELECTRICAL LABORATORY:—*W. S. Guest.*

Departments 3, 5, 6 and 7, II Year; 2½ hours per week; both terms.

This laboratory course is closely associated with the lecture course 138 on electricity for the second year. The more important and useful methods of testing generators and circuits for electromotive force, resistance, current, grounds, etc., are practised, often under conditions such as occur in practice. The work also includes methods of calibration of measuring instruments for voltage, current, power and energy, and certain studies of properties of incandescent lamps.

140. ELECTRICITY:—*H. W. Price.*

Department 8, II Year; 1 hour per week; second term; Departments 5 and 6, III Year; 1 hour per week; second term; Department 2, III Year; Departments 1 and 4, IV Year; 1 hour per week.

A course designed to fit the requirements of non-electrical students. A study of essential principles is followed by discussion of electrical apparatus plants, power transmission, railways, etc.

141. POWER:—*H. W. Price.*

Departments 2, 6 and 8, IV Year; 24 hours.

Under the name "Power" a number of operating experiments are arranged to afford some familiarity with measuring instruments and direct and alternating current machinery.

142. MAGNETISM AND ELECTRICITY:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 2 hours per week; both terms.

A course of lectures on theory of magnetism and magnetic circuits, theory of direct current generators, motors, etc.

143. ALTERNATING CURRENT:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 1 hour per week.

A first course of lectures on alternating current, covering principles of measurement and leading to the analytical and graphical treatment of the simpler problems relative to alternating current circuits and machinery.

144. ELECTRICAL LABORATORY:—*T. R. Rosebrugh, H. W. Price.*

Department 3, III Year; 4½ hours per week; Department 7, III Year; 6 hours per week.

This laboratory course is intended to afford the student an opportunity to become familiar with principles involved in continuous current shunt, series and compound wound generators and motors, and, to some extent, alternating current circuits and machinery. Other sections of the work deal with the magnetic properties of iron and steel, and study of iron losses in transformers and generators.

The course is arranged to stand in close relation to the lecture courses in the subjects of magnetism and electricity and alternating current (142, 143) for III Year, and to certain design work (145).

145. ELECTRICAL DESIGN:—*H. W. Price.*

Department 7, III Year; 1 hour per week.

A course of lectures dealing with design of electric machinery and plants, accompanied by designs to be worked out in the design room.

146. ELECTRICAL DESIGN:—*H. W. Price.*

Department 7, III Year.

A design room is set apart for working out designs of electrical apparatus such as transformers, generators, motors, auxiliary apparatus, etc.

Special forms and notes are employed, arranged to suit the various studies. Certain models are provided to assist where necessary.

147. APPLIED ELECTRICITY;—*T. R. Rosebrugh.*

Department 7, IV Year.

This course deals by analytical and vector methods with the theory of alternating current circuits and machinery. Applications of theory are considered with regard to transformers, single and polyphase generators, synchronous motors and rotary converters, induction and commutating series motors, transmission lines, wave analysis, etc.

148. ELECTRICAL LABORATORY;—*T. R. Rosebrugh, H. W. Price.*

Department 7, IV Year, in connection with 147.

This laboratory course involves a thorough study of principles and properties of single and polyphase circuits and apparatus. Both vector and analytical methods are applied to the solution of problems based on tests made on laboratory machines.

The work deals mainly with constant voltage and constant current transformers, single and polyphase alternators, synchronous motors, rotary converters, induction and single phase commutating motors, transmission line, etc. The work does not consist only of factory tests, but is designed to lead the student to apply theory to practice as illustrated in the apparatus under test, with a view to an exact understanding of methods and an appreciation of limitations under many conditions. Free use is made of the oscillograph as a necessary device for "seeing" conditions under investigation. The best commercial measuring instruments are available.

GEOLOGY.

150. GEOLOGY (Elementary):—*A. P. Coleman.*

Departments 2 and 5, II Year; Department 1, III Year; 1 hour per week; both terms.

This course deals chiefly with historical geology with special reference to Canadian formations.

Reference books:—Introduction to Geology—Scott; Text Book of Geology—Dana.

151. ECONOMIC GEOLOGY. (Including Dynamical and Structural Geology):—*A. P. Coleman.*

Departments 2 and 5, III Year; 1 hour per week; first term; 2 hours per week; second term. Department 1, IV Year; 1 hour per week; both terms.

A study of the more important economic rocks, minerals and ores with their geological associations. Special attention paid to Canadian deposits.

152. ADVANCED GEOLOGY:—*A. P. Coleman.*

Department 2, IV Year; 2 hours per week; both terms.

(A) *Pre-Cambrian Geology*.—An account of the Keewatin, Huronian and Laurentian rocks of Canada, with their distribution, structural relations and economic features, and briefer accounts of similar formations in the United States and elsewhere.

Works of Reference:—Reports of the United States and Canadian Geological Surveys, of the Bureau of Mines of Ontario, etc.

- (B) *Pleistocene Geology*.—Lectures on the formation and distribution of the drift deposits of North America, with brief references to other regions. Glacial, Interglacial and Postglacial beds are described, changes of climate are discussed with their probable causes, and the economic features of the clays, sands and gravels are pointed out. A weekly excursion is made during October and November to points of interest near Toronto, which is the centre of the most important development of Pleistocene in America.
- (C) *Physiography*.—A course of lectures on the surface forms of the earth, with the geological factors which have produced them. The broad features of the earth, its plains, tablelands, hills, valleys, mountains, oceans, rivers and lakes are discussed in a general way, methods of topographical surveys and mapping are referred to, and the chief physiographic areas of Canada are described.

153. MINING GEOLOGY:—*A. P. Coleman.*

Department 2, IV Year; 1 hour per week; both terms.

A course of lectures on geological problems associated with mining, typical mining regions in Canada, the United States and elsewhere being discussed from the geological side.

Works of reference:—Mineral Industry and the books mentioned under (A).

154. GEOLOGICAL EXCURSIONS:—*A. P. Coleman.*

Department 2, IV Year.

Trips to points of interest in the vicinity of Toronto.

155. ORE DEPOSITS:—*A. P. Coleman.*

Department 2, III Year; 1 hour per week; both terms.

Discussion of the origin and classification of ore deposits in a general way, the mode of occurrence of the chief metals, and statistics of production, special attention being given to the metals mined in Canada.

156. ECONOMIC GEOLOGY:—*W. A. Parks.*

Department 2, III Year; 2 hours per week; second term.

Laboratory work on ores, manner of occurrence, vein structure, etc., Geological maps of typical mining regions.

MINERALOGY.

157. ELEMENTARY MINERALOGY:—*J. E. Thomson.*

Departments 5 and 8, I Year; Department 2, II Year; 2 lectures per week; first term.

After introducing the student to the chief chemical, physical and crystallographic characteristics of minerals, the course becomes descriptive and deals with about one hundred of the minerals most important from the industrial or scientific point of view.

Text books:—Minerals and how to study them—Dana; Text Book of Mineralogy—Dana.

158. MINERALOGY:—*J. E. Thomson.*

Department 5, I Year; 4 hours per week, first term; 3 hours per week, second term. Department 8, I year; 1 hour per week; first term.

Introduction to blow-pipe analysis, determination of minerals by inspection and physical tests.

Text books:—Text Book of Mineralogy—Dana; Determinative Mineralogy—Lewis.

159. PRIMARY MINERALOGY:—*A. L. Parsons.*

Department 1, II Year; 2 hours per week; first term.

A very brief introduction to the study of minerals and rocks.

Text books:—Minerals and how to study them—Dana; Handbook of Rocks—Kemp.

160. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 2, II Year; 1 hour per week, first term; 3 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; introduction to blow-pipe practice.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy—Lewis.

161. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 1, II Year; 1 hour per week, first term; 2 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; study of common rock types and their identification.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

162. MINERALOGY:—*A. L. Parsons.*

Department 5, II Year; 1 hour per week; second term.

Introduction to the study of rocks; determination of minerals and rocks by means of tables based on the physical properties.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

163. ELEMENTARY PETROGRAPHY:—*T. L. Walker.*

Department 2, III Year; 1 hour per week.

A course of lectures and laboratory work introducing the student to the macroscopic study of rocks.

Text books:—Handbook of Rocks—Kemp; Rocks and rock minerals—Pirsson.

164. MINERALOGY:—*J. E. Thomson.*

Department 2, III Year; 2 hours per week.

Determination of minerals by means of the blow-pipe and physical properties.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy—Lewis.

165. GENERAL PETROGRAPHY:—*T. L. Walker.*

Department 2, IV Year. 1 hour per week.

Study of the chief rock-forming minerals and of some phases of petrography not covered in the course of the previous year.

166. PETROGRAPHY:—*T. L. Walker.*

Department 2, IV Year; 2 hours per week; both terms.

Study of the chief rock-forming minerals, of rocks in thin sections and in hand specimens.

Text books:—Rocks and Rock Minerals—Pirsson; Minerals in Rock Sections—Luquer.

167. CRYSTALLOGRAPHY:—*A. L. Parsons.*

Department 5, III Year; 1 hour per week.

A course devoted to lectures and practical work on the geometrical and optical properties of crystals, preparing the student for the study of rocks in thin sections and for the examination of crystallized substances, natural and artificial, under the polarizing microscope.

168. MINERALOGY:—*J. E. Thomson.*

Department 8, I Year; 1½ hours a week, second term.

Determination of minerals by means of the blow-pipe.

Text Book:—Lewis, Determinative Mineralogy.

169. MINERALOGY:—*A. L. Parsons.*

Department 8, II Year; 1 hour per week.

Determination of minerals by physical properties.

Text Book:—Mineral Tables—Eakle.

MINING, ASSAYING AND ORE DRESSING.

170. MINING:—*H. E. T. Haultain.*

Department 2, II Year; 1 hour per week; first term. Department

8, II Year; 1 hour per week; both terms.

An introduction to the study of mining and ore dressing methods.

171. MINING AND ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, II Year; 3 hours per week; first term.
Introductory work with rock-drills and various ore dressing appliances.
172. MINING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, III Year; 2 hours' lectures per week, second term; 3 hours' laboratory work per week, second term.
General mining methods.
173. ASSAYING:—*H. E. T. Haultain, J. T. King.*
Departments 2 and 8, III Year; 1 hour lecture per week, first term; 3 hours' laboratory work per week, both terms; Departments 5 and 6, III Year; 1½ hours' laboratory work per week; both terms.
Assaying of various ores for gold, silver, lead and copper.
174. ASSAYING:—*H. E. T. Haultain, J. T. King.*
Department 2, IV Year; 1 hour lecture per week, one term; 3 hours' laboratory work per week, one term.
Continuation of the work of III Year.
175. MINING:—*H. E. T. Haultain.*
Department 2, IV Year; 1 hour lecture per week: both terms.
Special mining methods, examinations, reports.
176. MILLING:—*H. E. T. Haultain, F. C. Dyer.*
Department 2, IV Year; 3 hours' laboratory work per week; both terms.
Advanced work with ore dressing appliances, complete mill tests.
177. ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, III Year; 1 hour per week; both terms.
179. ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Department 2, IV Year; 1 hour per week; both terms.

METALLURGY.

180. METALLURGY:—*G. A. Guess.*
Departments 2, 5 and 6, IV Year; 1 hour per week; both terms.
Advanced studies in the metallurgy of gold, silver, copper, lead, nickel, and zinc, metallurgical problems.
181. FERRO-METALLURGY:—*T. R. Loudon.*
Departments 1, 2, 3, 5, 6, 7 and 8, III Year; 1 hour per week; both terms.
The physical properties of iron and steel and the circumstances that influence the strength, etc., of iron. The different modes of manufacture of iron and steel and the effect of different processes of making on the resulting products; explanations of specifications for iron and steel adopted by engineers.

182. METALLURGY:—*G. A. Guess.*

Department 2, IV Year; 6 hours' laboratory work per week; second term.

Calibration of pyrometers, blast furnace smelting and copper converting, cyanidation, acid leaching of copper ores, electrolytic refining of lead and copper, electrometallurgy.

183. METALLURGY:—*G. A. Guess.*

Departments 2, 5, 6 and 8, II Year; 1 hour per week; second term.

An introduction to the study of general metallurgy.

184. METALLURGY:—*G. A. Guess.*

Departments 2, 5 and 6, III Year; 1 hour per week; both terms.

General metallurgy.

185. METALLURGY:—*G. A. Guess.*

Department 8, II Year; 1 hour per week, both terms.

A lecture course in the study of metallurgical fuels, their use, preparation, calorific value and temperature of combustion, introduction to the study of metallurgical processes. Problems.

Two hours' laboratory work, second term.

186. METALLURGY:—*G. A. Guess.*

Department 8, III Year; 1 hour per week; first term; 4 hours per week; second term.

The uses, properties and metallurgy of the metals except iron, with special reference to copper, nickel, lead and zinc. The study of clays and their industrial uses. An additional laboratory course of 100 hours.

186a. METALLURGY:—*G. A. Guess.*

Department 8, IV Year; 2 hours per week, both terms, and 9 hours' laboratory work, both terms.

Lixiviation of copper ores, design and organization of plants, metallurgical book-keeping, metallurgical balance sheets, thermal balance sheets, electrometallurgy, electrolytic refining processes, a particular study of Canadian problems.

MATHEMATICS.

187. ALGEBRA:—*A. T. DeLury.*

Departments 1, 2, 3, 5, 6, 7, 8, I Year; 2 hours per week; both terms.

Simple equations of one, two and three unknown quantities; quadratic equations of one and two unknown quantities; graphic representation of functions and the introduction of the gradient function; proportion and progressions; interest forms and annuities, permutations, combinations, limits, the general theory of infinite series, binomial theorem, exponential and logarithmic series.

Text book:—Intermediate Algebra—DeLury.

188. ANALYTICAL GEOMETRY:—*I. R. Pounder.*

All Departments, I Year; 1 hour per week first term; 2 hours per week second term.

The course in Elementary Analytical Geometry covers the more familiar propositions in connection with the straight line, circle, parabola, ellipse and hyperbola. The subject is treated so as to illustrate the general methods of analytical geometry.

189. TRIGONOMETRY, PLANE:—*M. A. Mackenzie.*

Departments 1, 2, 3, 5, 6, 7, 8, I Year; 2 hours per week; first term.

Solutions of triangles and practical problems.

Text book:—Practical Trigonometry—Plane and Fawdry.

190. CALCULUS, DIFFERENTIAL AND INTEGRAL:—*S. Beatty.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; Department 5, II Year, optional; 2 hours per week; both terms.

This is an elementary course in the infinitesimal calculus, but adequate to afford a knowledge of the character and methods of the subject and to enable students in chemistry, engineering, etc., to understand such of their text books as introduce the calculus.

191. TRIGONOMETRY, SPHERICAL:—*L. B. Stewart.*

Department 1, II Year; 1 hour per week; first term.

A course of lectures includes the derivation of formulæ and their application to the solution of triangles and to practical problems.

Text book:—Spherical Trigonometry—Todhunter and Leatham.

192. LEAST SQUARES, METHOD OF:—*L. B. Stewart.*

Department 1, III Year; 1 hour per week; first term.

The course of lectures includes: The general principles of probability, the law of error, direct measurements of equal and different weights; mean square and probable errors; indirect measurements; conditioned observations; applications to empirical constants and formulæ, etc.

Text book:—Least Squares—Merriman.

TECHNICAL PHYSICS.

195. ACOUSTICS:—*G. R. Anderson.*

Department 4, III Year.

Wave motion, propagation, reflection and transmission of sounds.

Laws of vibrating strings, pipes and forks. Velocity of sound. Musical scales. Absorption of sound by various substances, use of deadening material in buildings. Amount of reverberation permissible and desirable in public buildings. Lectures and laboratory work.

196. HYDROSTATICS:—*G. R. Anderson.*

All Departments, II Year.

Laws of fluid pressure and application to machines. Density of solids and fluids, theory of flotation.

Lectures and laboratory work. Spring term.

197. OPTICS:—*G. R. Anderson.*

Departments 1, 2, 3, 5, 6 and 7, II Year.

Rectilinear propagation of light, illumination, photometry, light standards. Distribution of light by reflectors and diffusers, general and selective absorption, economic values of artificial lights.

Laws of reflection and refraction, theory of optical instruments.

Light considered as wave motion, dispersion, spectrum analysis, colour phenomena, polarization.

Lectures and laboratory work, Fall term.

197(a). OPTICS AND LIGHTING:—*G. R. Anderson.*

Dept. 4, II Year.

198. HEAT:—*G. R. Anderson.*

Departments 1, 5 and 8, III Year.

Generation and propagation of heat. General and industrial thermometry, calorimetry and pyrometry. Linear and cubical expansion, gas laws. Specific heat of solids, liquids and gases, latent heat of fusion and vaporization. Mechanical equivalent of heat. Carnot cycle.

Lectures and laboratory work, Fall term.

199. PHOTOGRAPHY:—*G. R. Anderson.*

Departments 1 and 4, III Year; Departments 3 and 7, IV Year.

The camera and its adjustments, lenses, shutters, screens. Plates or various purposes, films, prevention of halation. Lighting, exposure, development. Paper of various kinds, printing, enlargement and reduction, blue printing and allied processes. Record photography, photogrammetry and photo-surveying. Photography in colour.

Lectures Fall term, and laboratory work both terms.

200. ILLUMINATION:—*G. R. Anderson.*

Department 4, II Year.

Principles of interior and street illumination. Artificial lighting of public and private buildings, etc.

SURVEYING.

205. SURVEYING:—*S. R. Crerar.*

Departments 1 and 2, I Year; 1 hour per week; both terms.

The lecture course includes the general principles; surveying with the chain, the compass and chain and the transit and chain and level the applications of trigonometry to inaccessible heights and distances; mensuration of surfaces and solids, co-ordinate surveying, division of land, etc.

Text books:—Plane Surveying—Tracy; Theory and Practice of Surveying—Johnson and Smith.

206. FIELD WORK:—*S. R. Crerar.*

Departments 1 and 2, I Year; 9 hours per week; first term.

This course comprises testing chains; practice in chaining; a complete survey of a piece of land with the chain and transit; keeping of field notes; the use of the transit and compass in surveying closed figures and traverse lines and in ranging straight lines; plotting by latitudes and departures, and otherwise computing areas. Instrumental work with level.

207. SURVEYING:—*W. M. Treadgold.*

Departments 1 and 2, II Year; 1 hour per week; both terms.

This course of lectures takes up in detail, simple, reverse and compound curves as applied to railroad surveying. It also includes stadia, plane table and photographic surveying as applied to topographic work, and the main features of mine and hydrographic surveying.

Text books:—Henck, Searles, Allen (Field books for Engineers) Theory and Practice of Surveying—Johnson and Smith; Surveying—Breed and Hosmer.

208. FIELD WORK:—*W. M. Treadgold, E. W. Banting.*

Departments 1 and 2, II Year; 9 hours per week; first term.

This course of instruction embraces all adjustments of the transit, minor problems in triangulation and traversing—ordinary and special problems as applied to railroad work in regard to curves, simple, reverse and compound, profile levelling and plotting of profile.

209. SURVEYING AND LEVELLING:—*W. M. Treadgold.*

Department 1, III Year; 1 hour per week; both terms; Department 2, III Year; 1 hour per week; first term.

This course of lectures takes up the work of the railroad engineer on construction, including profiles, cross sectioning, computation of volume of earthwork, overhaul, transition curves, laying out turnouts, frogs and switches, etc.

Also a discussion of trigonometric and barometric levelling.

Text books:—Field Engineering—Searles; Railroad Curves and Earthworks—Allen.

210. FIELD WORK:—*W. M. Treadgold, E. W. Banting.*

Departments 1 and 2, III Year; about 9 hours per week; first term.

This includes adjustments of levels and determination of profile, cross sectioning and computation of earthwork of located line on ground and plotting of same; also cross sectioning by use of hand level. A complete stadia topographic survey is made and plotted. Micrometer work and plane table traverse are also taken up.

ADDITIONAL, FOURTH YEAR OPTIONS.

211. RAILWAY ENGINEERING:—*W. M. Treadgold.*

Department 1, IV Year; about 2 hours per week.

The object of this course is to make the student acquainted with the general principles of railroad and street railway engineering, and the subject will be studied from the standpoint of economic theory of location; train resistance; effect of grade, distance and curvature and rise and fall; maintenance of way; yards and terminals; tunnels, and street railway practice.

212. FIELD WORK:—*W. M. Treadgold.*

Department 1, IV Year; about 11 hours per week; first term.

The work consists of an original survey for a railroad some one or two miles in length, the work being conducted according to the most modern methods of location. Upon the completion of this work a contour map of the district surveyed is plotted in the drafting room and a line adjusted to it. This is staked out in the field, profiles taken and complete estimates of the cost of construction made.

213. SANITARY ENGINEERING.

Sanitary Chemistry (113).

Advanced Biology (63a).

Bacteriology (64).

Re-inforced Concrete (22).

Hydraulics (32b).

Miscellaneous Structures (24a).

*Sanitary Engineering:—*A lecture course of 1 hour per week, both terms, in which consideration is given to the problems of water supply and sewage disposal as viewed by the engineer. Some practice in the design of works from assumed data is afforded.

Reference books:—Sewage Disposal—Fuller; Public Water Supplies—Turneure & Russell.

214. HIGHWAY ENGINEERING:—

Department 1, IV Year.

A lecture and laboratory course of about 8 hours per week, dealing with materials, design and construction of highways and pavements and the testing of various materials used in such work.

215. STRUCTURAL ENGINEERING:—

Students in Civil Engineering who desire to specialize in the subjects best fitting them for designing or constructing engineers on bridge-building or other analogous work, may do so by selecting the Structural Engineering Option in the fourth year. In addition to the obligatory subjects, the following lecture and laboratory courses are provided for those selecting this option:

Theory of Structures (16).
Strength and Elasticity of Materials (17).
Iron and Steel (23).
Reinforced Concrete (22).
Structural Design (51).
Mill Building Design (24).
Miscellaneous Structures (24a).

216. ARCHITECTURAL ENGINEERING:—

Architectural students desiring to give special attention to the structural design of buildings may do so by electing to take the Architectural Engineering Option in the fourth year. The following subjects, in addition to those required of all students in the fourth year in Architecture, are required:

Mill Building Design (24).
Architectural Design (48a).

MODERN LANGUAGES.

217. FRENCH:—*J. S. Will, J. B. Wallace.*

Required in Department 4, optional in Departments 1, 2, 3 and 7, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

218. GERMAN:—*G. H. Needler.*

Required in Departments 5 and 6, all years, optional in Departments 1, 2, 3 and 7, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

THESIS.

219. THESIS.

Required in all Departments, IV Year.

Each student is required to prepare a thesis of between six thousand and seven thousand words on a subject approved by Council.
 See circular of information.

VACATION WORK.

220. CONSTRUCTION NOTES. See special circular of information.

OUTLINE OF VACATION WORK**CONSTRUCTION NOTES.**

II and III Years.

The construction notes required consist of neat and complete dimensioned sketches in pencil of any structures, machines or plants which may be of interest. Any object chosen should be represented and dimensioned in such a manner that it could be completely constructed from the notes as the only available information.

From students in Department 2, who have been actually engaged during the summer with Government or other approved geological survey parties, geological field notes will be accepted in lieu of construction notes.

MASTER OF APPLIED SCIENCE DEGREE.

1. A candidate for the degree of Master of Applied Science (M.A.Sc.) shall hold the degree of Bachelor of Applied Science (B.A.Sc.) of this University.
2. He shall spend not less than one academic year in attendance as a student, in the Faculty of Applied Science, on a course of study approved by the Council.
3. He shall present a satisfactory thesis on a subject approved by the Council.
4. He shall pass such examinations as the Council may decide.
5. The candidate must register at the beginning of the academic year.

PROFESSIONAL DEGREES.

The attention of graduates is directed to the following regulations respecting professional degrees.

The following degrees have been established: Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem.E.), subject to the following regulations:

1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science or of the Faculty of Applied Science and Engineering or the degree of Bachelor of Applied Science.
2. He shall have spent at least three years after receiving the diploma or the degree in the actual practice of the branch of engineering wherein he is a candidate for a degree.
3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.

4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidate's professional experience for the purpose of clauses 2 and 3.

The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree, the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.

The candidate may be required at the option of the Examiners to undergo an examination in the subject of this thesis.

6. Notice in writing shall be sent to the Secretary not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Examiners.
7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Secretary not later than the first day of April.
8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Examiners.
9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.
10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the University.

LABORATORY EQUIPMENT.

THERMODYNAMIC AND MECHANICAL LABORATORY.

The University in 1909 completed the erection of a large, well-equipped building for the accommodation of the steam, gas, mechanical and hydraulic laboratories. A more complete description of the laboratories has been published elsewhere, so that the present description is only intended to give the main features.

The part of the building set apart for thermodynamics and other mechanical work is the ground floor of a room 60 ft. x 155 ft. This room is lighted entirely from the roof in a very perfect way. A part of the space 40 ft. wide running the entire length of 155 feet is served by a 3-ton travelling crane and contains the following equipment:

50 h.p. Brown engine with separate jackets on both heads and barrel of cylinder.

Two-stage Rand air compressor having compound steam cylinders, each fitted with Meyer cut-off gear. The low pressure air cylinder has Corliss inlet gear.

30 h.p. high-speed Leonard tandem compound engine with shaft governor.

15 h.p. high-speed McEwen engine.

75 h.p. two-line compound Willans engine.

15 h.p. DeLaval turbine with special nozzles for condensing and non-condensing tests.

Two 15 h.p. Leonard engines with different types of valves, which are used for valve setting.

There are also two surface condensers with air pumps so arranged that any engine in the laboratory may be made to exhaust into the atmosphere through an open heater or into one of the condensers, the change from one arrangement to the other being accomplished in a few minutes without the aid of valves.

The laboratory further contains:

A 3 ton York refrigerating machine with tanks.

An Amsler transmission dynamometer.

Apparatus for testing injectors and steam pumps.

Numerous other pieces of apparatus and instruments.

The work on internal combustion engines and producers is performed on the following:

18 h.p. Canada suction gas producer.

14 h.p. National gas engine arranged for various compressions and points of ignition.

10 h.p. Fielding and Platt engine for city gas or coal oil, having various adjustments.

8 h.p. Otto gas engine.

6 h.p. marine gasoline engine.

Ericsson air engine.

Various accessories to above machines.

Steam for the laboratory is supplied by two 50 h.p. and one 100 h.p. Babcock and Wilcox boilers, the latter having an internal superheater. These boilers are located in a separate boiler room. They are used for experimental work only and are fitted up for testing. The gases pass up through two independent chimneys, and these have been arranged so that the draft and other conditions in the chimney at any point of its height may be examined.

In smaller work-rooms off the main laboratory are placed belt and oil testing machines, apparatus for testing the efficiency of gears and machines, and for experiments in the balancing of machinery.

HYDRAULIC LABORATORY.

The hydraulic laboratory occupies two floors each 40 feet x 112 feet, which are well lighted by large windows on the side and end.

The water for the experimental work is pumped through the various pieces of apparatus from a well by means of two turbine pumping units, both of which are driven by a Belliss and Morcom compound engine of 125 h.p. running at a speed of 525 revs. per minute. Both engine and pumps have been installed with a view to using them in experimental work as well as for supply of water for other apparatus used in the laboratory.

The pumping units are capable of delivering one cubic foot of water per second against heads of 250 feet and 300 feet respectively. These units are designed and connected up so that they may be run in series giving the above discharge at 550 feet head, or they may be run in parallel giving double the discharge at a lower head. Each pumping unit consists of two two-stage pumps mounted on a common base and driven by a single pulley, and the construction and piping are such that each two-stage pump may be driven separately or that all may be driven at once, discharging separately one cubic foot per second at about 125 feet head through each of four independent pipes, or else the pumps may be run in series or in parallel. The scheme is thus well adapted to laboratory work, and under the heads used on reaction turbines about six cubic feet per second may be obtained.

The laboratory further contains a large vertical steel tank $5\frac{1}{2}$ feet diameter by 34 feet high with arrangements for the attachment of nozzles and other mouthpieces, etc. Connections are also arranged for reaction turbines, the tank acting as a reservoir.

The discharge from the turbines or nozzles is measured in a weir tank nearly 6 feet wide and 21 feet long, containing a contracted weir $4\frac{1}{2}$ feet wide. This weir may be calibrated by two weighing tanks, each having a capacity of about 240 cubic feet.

There are three reaction turbines and two impulse wheels all ready for experiment, the power being measured by brakes and the water by weir or orifices. Amongst the reaction turbines may be mentioned the one designed and built by Escher Wyss & Co., specially for the laboratory.

Smaller orifice and weir tanks, each about $3 \times 3 \times 12$ feet with necessary measuring tanks, are arranged for instruction in coefficients of various kinds and practice with weirs and orifices.

A Venturi meter and other meters, also an hydraulic ram and similar devices are available for testing, and good facilities have been arranged for investigating friction and other properties of pipes and fire hose.

For special investigations on turbine and centrifugal pumps, other pumps in addition to those already described have been arranged.

The basement of the laboratory contains an open trough 5 feet wide, about 110 feet long, with a large weir at one end. It is intended to use this trough for experiments on the flow in open channels, for measurements of large discharges by means of the weir, and for experiments with current meters and Pitot tubes.

Numerous pieces of smaller apparatus, together with all instruments required, have also been provided, and the laboratory equipment is believed to be very complete.

DONATIONS TO THE THERMODYNAMIC AND HYDRAULIC LABORATORIES.

The following donations to the equipment of the laboratories have been made through the kindness of those mentioned:

50 h.p. Wheeler Surface Condenser, presented by Mr. F. M. Wheeler, New York.

Blake Feed Pump, presented by the manufacturers.

6-inch New American Turbine, presented by Wm. Kennedy & Sons, Owen Sound, Ont.

Two Crown Water Meters, presented by the National Meter Co., New York, through Mr. M. Warnock, Toronto.

Rock Drill, presented by Sullivan Machinery Co., New York, through Mr. A. E. Blackwood, '95.

Marine Gasoline Engine, presented by Canadian Fairbanks Co., Montreal.

Two engines with different types of valve, presented by Messrs. E. Leonard & Sons, London, Ont.

Bundy trap from American Radiator Co., through Messrs. Russell & Gifford.

Dunham steam trap from C. A. Dunham Co.

Sectional models of valves from American Radiator Co.

Sectional model Mason Reducing Valve by Russell & Gifford.

Tanks, etc., by John Inglis Co. Pressure Fan from Sheldons Ltd., Galt.

In addition to the above, other firms have materially assisted by offering apparatus at or below cost price, among whom may be specially mentioned, The Canadian Rand Drill Co., Sherbrooke, Quebec.

PHYSICAL LABORATORIES.

The optical laboratory is equipped with Weinhold optical benches and accessories for determining the constants of mirrors and lenses and for demonstrating the construction and use of telescopes, field glasses, microscopes, etc. There is also an equipment consisting of one or more of the following optical instruments:—field glasses, microscopes, reading telescope, small comparators, spectrometer, various types of photometer, small focometer, cathetometer, polariscope, illuminometer, standard gas light testing bench, projecting lanterns, etc.

The photographic laboratory is supplied with a number of hand cameras for the use of students. There are also larger cameras for Departmental work, copying cameras, enlarging lanterns and a kinematograph camera, printer and projector, electric blue-printing machine and the necessary dark rooms.

The hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balance, Jolly balance, Mohr's balance, hydrostatic press, vacuum pumps.

The heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat, expansion apparatus, air thermometer, apparatus for verification of Boyle's law and pressure and boiling point curve, and for determination of the absolute expansion of mercury, Callendar's apparatus for determination of the mechanical equivalent of heat.

The acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajous' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electropneumatic wind chest and standardized organ pipes and other accessories.

ELECTRICAL LABORATORIES.

Galvanometer laboratory.—The equipment of this laboratory is, in part, as follows: A set of D'Arsonval galvanometers conveniently located at tables about the laboratory, a set of resistance boxes for use with the same; measuring instruments, including ammeters, voltmeters, wattmeters, potentiometers and standard cells. Apparatus for the measurement of low resistance, including a ductor, and for high resistance, including a megger; several Carey Foster outfits and a Roller bond tester. There are also experimental lines for practice in locating faults, photometer outfits with rotating devices and various types of arc lamps.

Another room is fitted more especially for calibration of electrical instruments for alternating and direct currents. About one hundred and twenty portable measuring instruments are available for students' use, also standard instruments, including Weston laboratory standards, Kelvin balances and a Wolff potentiometer, with which the portable instruments may be compared.

Machine laboratory.—This laboratory, occupying two large rooms, contains twenty-five dynamos and motors varying in capacity from two to twenty kilowatts, adapted for experiments illustrating the properties of compound, shunt and series dynamos and motors, arc machines, as well as the use of interpoles. Switch-boards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines.

This laboratory also contains two 15 kw., 25 cycle and two special 15 kw., 60 cycle General Electric polyphase revolving field alternators direct driven by motors, two $7\frac{1}{2}$ kw. alternators, two rotary converters of 10 kw. and 5 kw. capacity, a $7\frac{1}{2}$ kw. General Electric polyphase induction motor with slip ring rotor, Westinghouse three-phase squirrel cage induction motors, Wagner single phase motor and unity power factor motor, Swedish General Electric variable speed motor, Westinghouse single phase series motor, Westinghouse alternator, and several three phase and single phase induction motors; also transformers, reactive coils, and other details, as in the direct current sections of the laboratory described above, for experiments on the properties of alternating currents and alternating current apparatus in general. A constant-current transformer with its load of six series arc lamps, a three-element oscillograph, for studying wave forms, a high potential transformer and a mercury arc rectifier may also be mentioned. The students are supplied with Weston, Westinghouse and Thomson portable instruments for measuring purposes.

A motor generator set has been installed, comprising a 65 h.p. motor driving on the same shaft a 30 kw. 110 volt d.c. generator and a 30 kw. 60 cycle 110 volt alternator with direct connected exciter.

Appliances are also provided for the study of saturation and hysteretic properties of samples of iron and steel, and models for exercise in winding armatures.

High tension room. In a separate room with proper automatic devices for safety to the operator, there is installed a 20 K.W. transformer with a range of voltages up to 200,000 volts. Studies of insulators may be carried out. It is expected that the facilities for measurement of high voltage will shortly be improved by the installation of a sphere gap. Work with high frequency also is in contemplation.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accommodation for 112 students, each working space being supplied with water, gas and fume cupboard. The laboratory for quantitative analysis will accommodate 48 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 36 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. A laboratory for fourth year students with accommodation for eight workers has been fitted up. Each of these laboratories has its own balance room adjoining furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. A calorimeter room has been equipped in the basement. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

ELECTROCHEMICAL LABORATORIES.

The Electrochemical laboratories, which are situated in the Chemistry and Mining building, are provided with special facilities for electrolytic work, including a large storage battery and electroplating dynamo with tanks as well as a good set of apparatus and electrical measuring instruments. The experimental work on electric furnaces is performed in two rooms specially equipped for this purpose with rheostats and switch-board connections to a 120 kw. d.c. generator which supplies the current required.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building. One has a floor space of 17 feet x 47 feet, and the other 28 feet x 37 feet. Adjoining each is a room 15 feet x 11 feet, with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances

set on a concrete pier. Each of the laboratories contains a number of melting holes for crucible fusions, various gas and oil furnaces both for crucibles and muffles, and two large brick muffle furnaces.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 feet x 13 feet) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

METALLURGICAL LABORATORY.

This laboratory is on the basement floor of the Chemistry and Mining Building. The main room has a floor space of 1600 square feet.

Among the larger furnaces included in the equipment of the laboratory are a six hearth Wedge mechanical roasting furnace, the gases from which pass through Cottrell precipitating pipes 12 inches in diameter, and which are served with rectified current at 50,000 volts. There is also a gas fired muffle roasting furnace, a Steele-Harvey tilting furnace, a large resistance furnace for high temperature work, two water jacketed blast furnaces and a copper converter.

The laboratory has several small furnaces of various types. Facilities are provided for pyrometric work, for zinc retorting, for furnace gas analysis, for leaching of ores and for the electrolytic refining and precipitation of metals.

There is a laboratory for the testing of clays equipped with grinding pan, ball mill, presses, gas fired and oil fired kilns.

MILLING AND CONCENTRATING LABORATORY.

A detached building, 72 feet x 70 feet in area, contains the milling and concentrating equipment. It is heated, lighted and supplied with electric power from the central plant, and is divided into two parts. The greater part, with 72 feet x 53 feet floor space, and 22 feet high, contains the milling and concentrating equipment. The machinery for the former operations consists of a five-stamp battery erected on concrete foundations, Challenge ore feeder, amalgamating plates, Wilfley table, a clean-up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. This is driven by a 15-horsepower motor.

The concentrating part consists of a set of five revolving trommels for wet screenings, four three-compartment jigs, a trough classifier delivering three products, and two revolving buddles, Wilfley Slimer, Deister Slimer, Richard's Pulsating Classifier, Richard's Pulsating Jig, a dry sizer, besides experimental apparatus of various kinds for experimenting on the falling rates of ore particles, the settling of slimes, surface tension action in oil and flotation methods, etc. The waste products run to the same settling tanks as the tailings from the stamp battery. The ore is handled by a travelling crawl. All the machinery in this part is driven by electric motors.

The lower floor has been fitted up for lixiviation work with apparatus for the treatment of sands and slimes, different types of filter press, vacuum plant agitators, etc.

The plant throughout is intended mainly for teaching and experimental purposes and is made of such a size that numerous experiments can be carried out on small quantities of ore. Tests can also be made on lots of one to ten tons.

The other part of the milling building with 72 feet x 17 feet floor space and 15 feet high is divided into four separate rooms. The largest of the four rooms has an area of 476 square feet and is devoted to the crushing and pulverizing of the ores preparatory to their treatment in the milling and concentrating room. It is isolated in order to confine the dusty operations as far as possible to this one room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches, platform scales for weighing ore, a jib crane, pulleys, buckets, etc., for handling the rock. An adjoining room contains a 30 h.p. motor for driving the machinery of the crushing department, and storage bins for ore, work bench, etc. Another room with 17 feet x 15 feet floor space is furnished with a magnetic separator of the Rowan-Wetherill type, driven by its own motor.

STRENGTH OF MATERIALS LABORATORY.

This laboratory is intended for the scientific and commercial testing of materials of construction such as iron, steel, timber, concrete and masonry.

It is supplied with the following:

An Emery 50-ton hydraulic machine, built by Wm. Sellers & Co., of Philadelphia, for making tests in tension and compression.

A 100-ton screw power machine, built by Riehle Bros., Philadelphia. It is designed for making tests in tension, compression, shearing and cross-breaking, and will take in posts 12 feet long and beams up to 18 feet in length.

A Riehle 10-ton screw power universal testing machine.

A Riehle 50-ton screw power universal testing machine.

A 15-ton single lever-machine, built by J. Buckton & Co., Leeds, England.

A torsion machine, built by Tinius Olsen & Co., Philadelphia, for testing the strength and elasticity of shafting. This machine will twist shafts up to 16 feet in length and 2 inches in diameter.

A hand power torsion machine of simple mechanical construction, specially designed for the testing of short shafts of a maximum diameter of one inch.

A Riehle transverse testing machine of 5,000 pounds capacity, adapted to specimens up to 48 inches in length.

A Riehle compressometer, with spherical seat attachment for the adjustment of specimens having slightly non-parallel faces. This compressometer will receive specimens up to 10 inches in length.

An Olsen compression micrometer of standard type.

A 20,000 pound Olsen, hand power, wire testing machine, specially fitted for testing wooden columns with both fixed and pivoted ends.

A Riehle abrasion cylinder, built to the standard required by the National Brickmakers' Association, adopted in 1901.

A Berry strain-gauge for spans of 3 inches and 8 inches.

A Nalder dividing engine. This may be used either for the precise division of scales or for the calibration of instruments intended for refined measurements.

A large number of extensometers of the usual degree of precision. These include the Bauschinger, Martens, Unwin, Ames, Riehle, Johnson, Henning (recording) and other types. In addition there are the usual scales, micro-meters, telescopes and reflectors, voltmeters for the determination of metallic contact, and such other appliances as are necessary in the making of precise measurements.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labour. It is also supplied with the necessary appliances for making ordinary repairs and for making apparatus for special experiment and original investigation.

HIGHWAY MATERIALS LABORATORY.

This laboratory is equipped for carrying out investigations in the various materials employed in highway construction and maintenance, and comprises the following:

Page impact machine for testing the toughness of road materials.

Diamond core drill for preparing specimens for the toughness test.

Deval abrasion machine for testing the resistance to wear of road materials.

Cementation testing apparatus (Page type) for determining cementing properties of road materials.

Jaw crusher (Mitchell type) for crushing rock for various tests.

Power driven agitator with sieves for the mechanical analysis of sand, gravel and crushed rock.

The laboratory is also equipped with the appliances necessary for examining physical properties:—volatilization, specific gravity, viscosity, melting point, penetration, ductility, etc., of oils, asphalts, tars and other bituminous mixtures used in road construction and maintenance.

LABORATORY OF ONTARIO BOARD OF HEALTH.

Through the courtesy of the Secretary of the Provincial Board of Health for Ontario the facilities of the excellently equipped laboratory which the Board maintains at Stanley Park have, with certain conditions, been placed at the service of the University for the investigation of problems of interest to the sanitarian and the sanitary engineer. The equipment consists of various types of sewage sedimentation tank, sewage filter, sewage measuring devices, aerators, sterilizing appliances and a complete and representative plant intended for the filtration and sterilization of water by practically all known methods.

CEMENT TESTING LABORATORY.

This laboratory is fitted with all the ordinary moulds, sieves, balances, burettes, steaming and drying tanks, tables, and other appliances necessary in making the usual physical tests of a Portland cement. It is also supplied with completely equipped cabinets for individual work. In addition there are the following:

A 2,000 lb. Riehle machine fitted for either tension or compression.

A 2,000 lb. Riehle shot machine for tension.

A 2,000 lb. Fairbanks shot machine for tension.

A 1,000 lb. Olsen automatic shot machine fitted for tests in either tension or cross breaking.

An Olsen soapstone moist closet of modern design.

METROLOGICAL LABORATORY.

The department of surveying and geodesy is provided with all the ordinary field instruments, such as transits, levels, compasses, micrometers, sextants, planimeters, plane tables, tapes, chains, etc., with which is carried on the instruction in practical field operations as detailed elsewhere.

A small laboratory is also established in the basement of the observatory described below, containing the necessary instruments for the refined measurements of geodetic surveying; as, a standard yard and metre, a Rogers 10-foot comparator, an invar base measuring apparatus, a Kater's pendulum with vacuum chamber, a level trier, micrometer microscopes, etc.

The geodetic observatory in connection with this department is used for the instruction of students of the Fourth Year in taking observations for time, latitude, longitude, and azimuth by the precise methods used in connection with a geodetic survey. It contains a 10-inch theodolite and zenith telescope by Troughton & Simms; an astronomical transit instrument and an 8-inch theodolite by Cooke; two electro-chronographs; a Howard astronomical clock; a Dent sidereal break-circuit chronometer; arithmometers, etc.

GEOLOGICAL AND MINERALOGICAL LABORATORIES.

In the Chemistry and Mining building on College Street the University possesses a modern laboratory for Geology and Mineralogy.

Courses are given in laboratory work, especially in personal examination of type sets of rocks, fossils, minerals and crystal models. These laboratory exercises serve to illustrate the introductory didactic instruction.

For the encouragement of pure crystallography the laboratories are supplied with goniometers of the various types, crystal models, appliances for the cutting of oriental crystal sections and for the physical examination of the same. Practical petrography is carried on in rooms provided with type sets of rocks, both macroscopic and microscopic. Advanced students are taught to make thin sections of rocks and fossils and to study them microscopically. For students in Mining a laboratory course in the interpretation of geological maps and sections is provided. Typical mining regions are studied in detail and an opportunity is afforded for the examination of specimens illustrating economic geology.

The laboratory for the preparation of thin sections of rocks, minerals and fossils is provided with electric diamond saws and grinding appliances for the various types of work incidental to the preparation of thin sections and museum material.

A room is also provided for advanced work in cartography and geological surveying.

The departments possess 28 petrological microscopes and 5 of other types, so that it is now possible to provide advanced students with instruments and sets of thin sections for their own especial use. The blowpipe laboratory contains 156 lockers, especially designed for apparatus for students.

LIBRARY.

Rooms have been set apart in the Engineering and the Chemistry and Mining buildings for the housing of such periodicals and other literature of the University Library as is of special interest to the students of this faculty.

The University Library is contained in a building of its own, situated on the east side of the campus, that lies to the south of the Main Building. All students who have paid a library fee to the Bursar of the University are entitled to the privileges of the Library. Besides Reading Rooms the Building contains Departmental Studies, which may be used as study-rooms by honour students in the various branches and in which the Professors hold seminary courses. The Library is opened at 8.45 every morning and remains open until 5.15 in the afternoon (6 p.m. during the second term). Books may not be taken out of the building during the

daytime, but are lent for the night shortly before the hour of closing, to be returned the following morning before 10 o'clock. Books not in general demand may, on special application, be borrowed for a longer period. Failure to return a borrowed book at the proper time and other breaches of the regulations are punishable by fine or suspension from the privileges of the Library.

ROYAL ONTARIO MUSEUM.

Archaeology, Geology, Mineralogy, Palaeontology, Zoology.

Students of the University in all departments are recommended to avail themselves of the privileges of the Museum, which, although under separate control, is intimately connected with the work of the University.

The Museum is open on all week days from 10 a.m. to 5 p.m. The admission is free to the public on Tuesday, Thursday and Saturday. On other days an admission fee of fifteen cents is charged.

By a resolution of the Board of Trustees all regular students of the University may be admitted free on all days of the week by presenting their card of registration.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE UNIVERSITY OF TORONTO.

Officers for 1916-1917.

<i>President</i>	Jos. Banigan.
<i>Vice-President</i>	E. Birdsall.
<i>Treasurer</i>	W. G. Woonton.
<i>Corresponding Secretary</i>	R. C. Mitchell.
<i>Recording Secretary</i>	D. G. McLean.
<i>Curator</i>	J. F. Tanton.
<i>Fourth Year President</i>	F. C. Christie.
<i>Third Year President</i>	C. A. Richardson.
<i>Second Year President</i>	A. R. Clarry.
<i>First Year President</i>	L. G. Cunningham.
<i>Civil Club Representative</i>	W. K. Greatrex.
<i>Arch. Club Representative</i>	A. S. Mathers.
<i>Mining Club Representative</i>	G. Hanmer.
<i>Electrical Club Representative</i>	O. W. Titus.
<i>Chemical Club Representative</i>	J. V. Dickson.

The Society meets every second Wednesday during the academic year (except April), beginning with the third Wednesday in October. Papers are read, and discussions are held on engineering subjects. The Society publishes a journal monthly during the year, containing the best papers read at the meetings. A supply department is conducted by the Society, on a co-operative plan, through which instruments, drafting supplies, stationery, etc., may be purchased at a low cost. The Society is divided into five clubs for the purpose of affording a medium of study of matters relating in particular to the different departments of engineering.

THE INDUSTRIAL CHEMICAL CLUB.**Officers for 1916-1917.**

<i>Hon. President</i>	Dean Ellis.
<i>Hon. Vice-President</i>	Prof. J. W. Bain.
<i>Chairman</i>	J. V. Dickson.
<i>Vice-Chairman</i>	C. W. Hancock.
<i>Fourth Year Representative</i>	G. G. Macdonald.
<i>Third Year Representative</i>	J. H. Forman.
<i>Secretary-Treasurer</i>	H. C. Corman.
<i>Curator</i>	C. P. Sale.

The object of the Chemical Club is to promote the study of industrial chemistry and chemical engineering. Illustrated lectures, preceded by an informal dinner and a short musical programme, are held fortnightly, and on the following day an excursion is made to industrial chemical concerns located in the city or vicinity.

ARCHITECTURAL CLUB, 1916- 917.

<i>Hon. President</i>	J. M. Lyle.
<i>Chairman</i>	A. S. Mathers.

The Club is addressed at regular meetings by leading architects. Excursions are conducted to inspect various phases of construction work, involving work of interest to architects.

**MECHANICAL AND ELECTRICAL ENGINEERING CLUB,
1916-1917.**

<i>Chairman</i>	O. W. Titus.
<i>Vice-Chairman and Fourth Year Rep</i>	J. I. Gram.
<i>Secretary and Third Year Rep</i>	J. G. Ballinger.
<i>Treasurer and Second Year Rep</i>	A. G. Turnbull.
<i>Curator and First Year Rep</i>	E. A. Dunn.

The Club meets every Thursday during the academic year for the discussion of papers relating to mechanical and electrical engineering problems.

CIVIL ENGINEERING CLUB, 1916-1917.

Chairman.....W. K. Greatrex.
Fourth Year Representative.....C. E. Tilston.

The Club is addressed during the academic year by practising engineers on modern methods and problems in civil engineering.

**MINING AND METALLURGICAL ENGINEERING CLUB
 1916-1917.**

Chairman.....G. Hanmer.
Vice-Chairman.....B. C. Tomlinson.
Secretary-Treasurer.....C. A. Richardson.
Third Year Representative.....C. E. Macdonald.
Second Year Representative.....H. E. Purdy.
First Year Representative.....J. E. Croden.

**ATHLETIC ASSOCIATION (FACULTY)
 EXECUTIVE COMMITTEE 1916-1917**

Honorary President.....C. H. C. Wright.
President.....E. W. Smithson.
Vice-President.....J. G. O'Flaherty.
Secretary-Treasurer.....C. A. Richardson.
Fourth Year Representative.....G. F. Hutcheson.
Third Year Representative.....J. H. Forman.
Second Year Representative.....H. S. Spencer.
First Year Representative.....A. P. Mackenzie.

The Athletic Association has full control over all athletic clubs using the name of the Faculty of Applied Science. The Executive Committee has power to suspend any one from the privileges of membership in the Association for any breach of its regulations, and controls the finances of all athletic clubs in the aforesaid Faculty. The annual membership fee of this Association is fifty cents.

No other moneys are collected for the support of athletics in the Faculty of Applied Science without the sanction of the Executive Committee.

RUGBY FOOTBALL

The Mulock Cup, which was presented by Sir Wm. Mulock, M.A., LL.D. to the University of Toronto Rugby Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

RUGBY FOOTBALL CLUB.

Officers for 1916-1917.

<i>Honorary President</i>	T. R. Loudon.
<i>President</i>	H. C. Rose.
<i>Manager of team</i>	E. W. Smithson.
<i>Captain of team</i>	E. Birdsall.

ASSOCIATION FOOTBALL.

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB.

Owing to the small attendance "School" was not represented this year.

HOCKEY.

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of the late W. T. Jennings, Mem. Inst. C.E.

HOCKEY CLUB.

Officers for 1916-1917.

<i>Honorary President</i>	C. R. Young.
<i>President</i>	J. R. Gilley.
<i>Manager of team</i>	G. P. Pearson.
<i>Captain of team</i>	L. Levesque.

TRACK CLUB.

Officers for 1916-1917.

<i>Honorary President</i>	Prof. L. B. Stewart.
<i>President</i>	R. Workman.
<i>Manager</i>	C. A. Richardson.

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

<i>Officer Commanding</i>	Major S. P. Biggs.
<i>Captain</i>	{ T. C. Irving, Jr. E.F. G. N. Bramfitt.
<i>Lieutenant</i>	V. Boyd.
<i>Lieutenant</i>	T. R. Loudon.
<i>Lieutenant</i>	W. Monds.
<i>Lieutenant</i>	J. Heron.
<i>Medical Officer</i>	J. W. Barton, M.D.

BASKETBALL CLUB.

Officers for 1916-1917.

<i>Honorary President</i>	Prof. J. McGowan.
<i>Manager of Seniors</i>	A. B. Harris.

FACULTY OF APPLIED SCIENCE.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Y.M.C.A. of the Faculty of Applied Science was organized January 27th, 1905, and forms an integral part of the University of Toronto Y. M. C. A., which is a Federation of the Associations of the various Colleges and Faculties of the University. The object of the Association is to develop a true Christian manhood and to help the students in whatever way possible.

FACULTY OF APPLIED SCIENCE.

VARSITY REPRESENTATIVES

<i>Senior</i>	O. W. Titus.
<i>Junior</i>	H. E. Corman.

UNIVERSITY OF TORONTO C.O.T.C.**Staff.**

<i>Lieut.-Colonel</i>	W. R. Lang.
<i>Major</i>	A. D. LePan.
<i>Major</i>	C. V. Massey.
<i>Adjutant</i>	G. N. Bramfitt.
<i>Quartermaster</i>	Lieut. C. H. C. Wright.
<i>Paymaster</i>	Lieut. T. A. Reed.
<i>Medical Officer</i>	Capt. J. W. Barton.
<i>Musketry Officer</i>	Capt. F. B. Kenrick.

Establishment: 12 Companies and 1 half Company.

APPLIED SCIENCE COMPANIES.

<i>I Company</i>	Capt. C. R. Young.
<i>K Company</i>	{ Capt. H. H. Madill. Lieut. W. M. Treadgold.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION.**Directorate.**

<i>Honorary President</i>	R. A. Falconer, D.Litt. LL.D.
<i>President</i>	Prof. M. A. Mackenzie.
<i>Vice-President</i>	A. W. Macpherson.
<i>Secretary-Treasurer</i>	T. A. Reed.
<i>Physical Director</i>	Dr. J. W. Barton.

Directors.

Prof. C. H. C. Wright, Hugh Gall, E. Birdsall, Jos. Banigan, A. W. Macpherson, W. N. Robertson, J. A. Wales.

The Athletic Association is now the paramount body in University athletics and has entire jurisdiction over the athletic clubs using the University name, and over their finances, members and policy, subject to the University authorities. Henceforth no financial agreement can be entered into by any such club without the sanction of the Directorate. No expenditure of any kind in connection with any such club can be made without the written order of the Secretary-Treasurer of the Directorate.

UNIVERSITY OF TORONTO, STUDENTS' ADMINISTRATIVE COUNCIL.

<i>President Engineering Society</i>	Jos. Banigan.
<i>Chairman of Athletic and Discipline Committee</i> ...	F. C. Christie.
<i>Third Year Representative</i>	C. A. Richardson.
<i>Second Year Representative</i>	A. R. Clarry.
<i>First Year Representative</i>	L. G. Cunningham.

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the University, at a cost of from four dollars and a half a week upwards for comfortable lodging with board; or rooms may be rented at a cost from one dollar and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

UNIVERSITY RESIDENCES.

By the generosity of Mr. and Mrs. E. C. Whitney and other friends, the University can now offer to some hundred and fifty men the peculiar advantages of residential life and excellent accommodation within its own grounds. The Residence, opened in November, 1908, consists of three Houses situated on the north side of Hoskin Avenue, opening upon a quadrangle, the fourth side of which is formed by Devonshire Place. They stand about two hundred yards to the north of University College and of the University Dining Hall and close to the University Gymnasium and Athletic Field. The buildings are known as the South, East and North Houses.

Each House contains twenty-four single rooms, one single suite, one double room and eleven suites, a suite comprising a study and two bedrooms. A large room in each building, with an open hearth and a library has been set aside as a common room. A lavatory with hot and cold shower baths is provided for every eight men. The buildings are heated by steam and lighted by electricity.

The University supplies the table, chairs, book-case, chiffonier, bed, mattress, pillows, linen and window shades for each room; it is prepared to furnish a drop-light for a nominal rental.

Each occupant is charged \$2.50 room-rent per week, payable to the Bursar four weeks in advance. The charge for each single suite is \$3.50 per week. These charges cover heat, light, house-service, house-laundry, and the use of the telephone. There is no separate dining hall connected with the Residence, but board may be obtained at the adjacent University Dining Hall for \$3.75 per week.

Applications for rooms must be made in writing to the Secretary of the Residence Committee (address the Registrar's Office) and must be accompanied by a deposit of \$5.00. This deposit will be returned if the application be not granted, and will be forfeited if a room is assigned to the applicant and not taken by him, unless notice of his refusal of the room

be received by the Secretary in writing before September 8th. It will be returned in full at the end of the College year if the room key be given back and the room and furniture left in a satisfactory condition. The following principles govern the allotment of rooms: (i) In order to be assigned a room in the Residence, either before or during the session, a student must have obtained standing at the previous spring examination, with not more than *one* condition against him. (ii) The rooms in each House will be distributed proportionately between the various Faculties and Years. (iii) A limited number of rooms will be reserved for members of the incoming First Year until September 18th. (iv) Applications will be considered in order of priority.

The University lays down three general rules, designed to prevent haz,ng, the use of intoxicants and gambling. The students in each House shall elect a House Committee, which is entrusted by the University with the making and enforcing of any other needed rules and with the maintenance of order. A member of the Faculty resides in each House to act as friend and adviser to the men in residence.

FACULTY OF APPLIED SCIENCE.

REGISTER OF STUDENTS, 1916-1917.

First Year.

1*Anderson, A. M.....Toronto	6 Kerman, H. C.....Toronto
7 Armstrong, E. F.....Iroquois	5 Knight, H. A.....Guelph
1 Armstrong, C. G. R.....Merlin	7 Landsberg, M.....Toronto
1 Baker, G. H.....Toronto	7 Lavine, A.Toronto
1 Bennett, G. C.....Midland	3 McDonald, F. R.....Toronto
1 Black, W. G.....Midland	6 McLean, B. M.....London
3 Brumell, H. P., Buckingham, Que.	7 McLellan, J. D.....Toronto
3 Chambers, J. L....St. Mary's	3 McNaughton, L. T.....London
1 Cockerline, E. W.....Toronto	1 Mackenzie, A. P.....Toronto
6 Cody, H. B.....Hamilton	6*Mallett, G. S.....Toronto
2*Croden, J. E.....Toronto	3 Maunder, W. F.....Lindsay
1*Cunningham, L. G.....Toronto	7 Mitchell, M. H.....Oshawa
6 Dingman, A. H.....Stratford	7 Morton, E. B. G.....Barrie
7 Duncan, T. W.....Mooretown	7 Murphy, C. J.....London
3 Dunn, E. A.....Chatham	1 Mueller, R. M.....Toronto
7 Eley, F. C.....Toronto	4 Niece, H. P.....Preston
3*Elliott, W. B....St. Catharines	3 Park, R.....Hamilton
6 Emery, F. H.....Stratford	1 Pinel, W. G.....Toronto
6 Faill, J.....Stratford	7 Preston, H. E.....Midland
5 Fair, A. H.....Toronto	7 Pullan, E.....Toronto
1 Fletcher, L. W....St. Mary's	7 Ratcliffe, J. H.....Stouffville
1*Foley, W. J.....Ottawa	1 Rose, A. A.....Ailsa Craig
5 Goldstick, D.....Toronto	5 Sale, C. P.....Sandwich
7 Graham, H. C.....Elmvale	1 Salisbury, E. A.....Toronto
4 Hall, R. W.....Brampton	3 Skinner, J. C. E.....Bradford
5 Hambleton, A.....Toronto	7 Smillie, S. S.....Seaforth
7 Harold, W. H.....Shakespeare	6 Soehner, H. C.....Stratford
6*Hartry, R. A....Fort William	7 Spencer, W. E.....London
4 Hawkins, R. T.....Stayner	7 Stewart, A. L.....Kirkton
4 Helme, J. B....Smith's Falls	7 Wakefield, G. S.....Toronto
7 Henry, S. E.....Stratford	7 Welsman, T. S.....Toronto
7 Hill, C. R.....Weston	7 Wilson, A. E.....Port Perry
3 Keenleyside, R. D.....London	1 Wingfield, A. H.....Hamilton
4 Kentner, Miss M.....Toronto	4*Wright, B. H.....Toronto

Second Year.

1 Browne, W. J., St. John's, Nfld.	7 Clarry, A. R.....Locust Hill
1 Caldwell, H. J.....Toronto	5 Corman, H. E.....Caledonia
3 Campbell, T. W....Smith's Falls	5 Coyne, B.....Chesterville
1 Cavana, E. L.....Orillia	1 Culliton, P. J.....Stratford
7 Centner, M. H.....Toronto	7 Dancey, W. A.....Goderich

*Withdrew during the session for military service.

5 Downey, F. P..... Northwood	1 MacNicol, N.....Humber Bay
2 Duggan, S. F..... Schomberg	7 Manning, C. G.....Bowmanville
7 Durand, R. A.....Toronto	1 Paterson, E. L.....Rocklyn
7*Hamilton, A. E.....Toronto	2*Purdy, H. E.....Port Perry
7 Harkins, J. M.....Toronto	7 Reid, W. M.....Vinemount
1 Harman, W.....Zephyr	1 Riehl, W. H.....Stratford
7 Hess, J. E.....Zurich	7 Rose, H.....Sarnia
1 Hopper, G. H.....Toronto	3* Simmers, J. A.....Toronto
7 Illman, H.....Chatham	3 Spencer, H. S.....Picton
1 Irvin, W. F.....Toronto	1 Strathearn, D. K. C....Midland
7 Jenkins, C. F.....Thamesford	7 Tansey, J. R...Brookfield, Ill.
3 Lesperance, L. J.....Essex	1* Tanton, J. F.....London
5 Logan, I. M.....Niagara Falls	7 Tennyson, A. L.....Port Perry
1 McEachern, K. J.....Alvinston	7 Turnbull, A. G.....Galt
7 McNamara, C. J.....Drayton	1 Ure, D. G.....Woodstock
4 McPherson, C. D...Woodstock	1*Vardon, L. M.....Toronto
1 MacIntyre, W. B.....Belmont	3 Weicker, J. J.....Tavistock
1 MacLean, D. G.....London	7 Young, H. G.....Ellesmere

Third Year.

7 Ballinger, J. G..... Streetsville	3 Macpherson, G. L.....Toronto
1 Birdsall, E.....Toronto	1 Maddock, C. O.....Inwood
1 Brown, W. G.....Motherwell	1 Mitchell, R. C.....London
7 Duff, C. K.....Hamilton	3*O'Flaherty, J. G.....London
1 Ellis, F. D.....Toronto	7 Orr, W. H.....Toronto
1 Fairclough, H. W. J...Hamilton	3*Park, R. T.....Peterboro
6 Forman, J. H.....Grimsby	1 Pearson, G. P.....Schomberg
7 Forster, C.....Kingsville	2 Richardson, C. A., E. Cleveland, Ohio.
6 Hancock, C. W.....Hamilton	3 Robertson, W. D.....Toronto
7 Johnston, M.....Clayton	1 Rovsky, J.....Toronto
7 Johnston, F. E.....Mull	1 Sagar, W. L.....Toronto
1 Kearns, N.....Toronto	1 Samuel, M.....Toronto
3*McCreery, H. J.....Vancouver	1 Scott, C. R.....North Bay
1 McDonald, N. G.....Sunderland	1 Scott, D. G.....Toronto
7 McLeod, E. W.....Embro	7 Woonton, W. G.....London
2 Macdonald, C. E.....Toronto	

Fourth Year.

1 Babcock, H. A.....Toronto.	1 Harris, R. W.....Cobourg
4 Banigan, J.....Toronto	5 Holden, A. J.....Toronto
1 Berry, A. E.....St. Mary's	1 Hurlburt, R. W.....Mitchell
1 Bothwell, R. S. C.....Toronto	7 Hutcheson, G. F.....Huntsville
7 Brown, H. S.....Lansing	7 Hyman, B.....Toronto
7 Bumstead, S. W...Owen Sound	7 Levesque, L....Chicoutimi, Que.
1 Christie, F. C.....Yorkton, Sask.	3 McCandlish, S. G....Hamilton
7 Colleran, J. C.....Port Arthur	2 McClelland, H. L....Cooksville
1 Corman, E. H.....Hamilton	3 McIlhargey, P. E....Stratford
5 Dickson, J. V.....Toronto	5 Macdonald, G. G.....Toronto
1*Fraser, J. A.....Ilderton	1 Manning, R. C.....Hamilton
1*Gage, C. E.....Hamilton	4 Mathers, A. S.....Waterloo
7 Gram, J. I.....Weston	1 O'Brien, J. E.....Toronto
1 Greatrex, W. K.....Toronto	7 Offerhaus, W. A. R., Armstrong, B.C.
2 Hanmer, G.....Toronto	1 Parr, H. A.....Calgary, Alta.
3 Harris, A. B.....Toronto	

*Withdrew during the session for military service.

3 Paterson, W. B.....	Ilderton	7 Titus, O. W.....	Gore Bay
1 Ratz, R. D.....	Elmira	2 Tomlinson, B. C.....	Langstaff
1 Smith, E. E.....	Steelton	1 Topping, V... ..	Toronto
7 Smithson, E. W.....	London	7 Tufford, A. A.....	Hamilton
3 Snider, A. M.....	Waterloo	7 Tuttle, H. A.....	Niagara Falls
1 Speirs, R. M.....	Toronto	5 Tyrrell, E. J.....	Toronto
3 Swan, A. W., Edinburgh, Scot'd.		4 Watson, H. R.....	Toronto
1 Thomson, A. P.....	Toronto	1*Wood, G.....	Kincardine
1 Tilston, C. E.....	Toronto		

**Students of other Faculties taking Instruction in Assaying,
Surveying, etc.**

Courtnage, R. A.....	Brantford
Reed, Miss E. J.....	St. Catharines
Wheatley, A. C.....	Sarnia

Summary.

First Year Students.....	68
Second Year Students.....	46
Third Year Students.....	31
Fourth Year Students.....	48
Students of Other Faculties.....	3
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Scholarship.

Awarded by the Boiler Inspection and Insurance Co. of Canada for General Proficiency in the Third Year in Mechanical Engineering.

1912. A. S. Anderson	1915. L. L. Youell
1914. C. G. Davey	1916. A. M. Snider
1913. E. D. W. Courtice	

Degree of Master of Applied Science (M.A.Sc.).

1915. Avery, C. R.	1915. Parkinson, N. F.
1916. Dobson, W. P.	1915. Robertson, C. S.
1914. Murdie, W. C.	1915. Rolfson, O.
1916. Parker, G. C.	1915. Treloar, G. E.

PROFESSIONAL DEGREES AWARDED SINCE 1910.

Degree of Civil Engineer (C.E.).

1915. Bennett, G. A.	1916. Johnston, C.
1915. Challies, J. B.	1916. Johnston, J. T.
1913. Dallyn, F. A.	1913. Marrs, C. H.
1915. Davison, A. E.	1915. Smith, A.
1914. Gillespie, P.	1915. Stayner, D. S.
1914. Hill, S. N.	1911. Swan, W. G.
1914. Hogg, T. H.	1916. Watson, M. B.
1913. James, E. A.	1914. Young, C. R.

Degree of Mining Engineer (M.E.).

1912. Burwash, L. T.	1910. McMillan, J. G.
1915. Campbell, A. D.	1915. Neilly, B.
1913. Forbes, D. L. H.	

Degree of Mechanical Engineer (M.E.).

1916. Acres, H. G.	1913. Darling, E. H.
1915. Campbell, A. M.	1913. Manson, G. J.
1913. Christie, A. G.	1913. Smart, R. S.

Degree of Electrical Engineer (E.E.).

1913. Mitchell, P. H.	1914. Sara, R. A.
1915. Palmer, C. E.	

GRADUATES.

Graduates are requested to inform the Secretary of changes in their addresses.

1881.

1. J. L. MORRIS, C.E., O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.

1882.

1. D. JEFFREY, Windsor, Missouri
Contractor.
1. J. H. KENNEDY, C.E., O.L.S., Vancouver, B.C.
Chief Engineer, Great Northern Ry.
1. J. McAREE, B.A.Sc., D.T.S. (deceased).

1883.

1. D. BURNS, O.L.S., A.M. Can. Soc. C.E. (deceased).
1. G. H. DUGGAN, M. Can. Soc. C.E., Lachine, Que.
Vice-President and Chief Engineer, Dominion Bridge Co., Ltd.
1. J. W. TYRRELL, C.E., D.L.S., Hamilton, Ont.
Tyrrell & MacKay, Consulting Engineers and Surveyors.

1884.

1. W. C. KIRKLAND (deceased).
1. J. McDUGALL, B.A. (deceased).
1. A. R. RAYMER, Pittsburgh, Pa.
Assistant Chief Engineer, P. & L. E. Ry.
1. JAMES ROBERTSON, O.L.S., Toronto, Ont.
Commissioner, The Canada Co.
1. E. W. STERN, M. Am. Soc. C.E., 101 Park Ave., New York
Chief Engineer of Highways, Borough of Manhattan.

1885.

1. J. F. BLEAKLEY, Bowmanville, Ont.
Civil Engineer.
1. H. J. BOWMAN, D. & O.L.S., M. Can. Soc. C.E., Berlin, Ont.
Bowman & Connor.
1. E. E. HENDERSON, O.L.S., Henderson P.O., Me.
Civil Engineer.
1. B. A. LUDGATE, O.L.S., Pittsburgh, Pa.
Assistant Engineer, P. & L. E. Ry.
1. O. McKAY, O.L.S., Walkerville, Ont.
Civil Engineer and Surveyor.

1886.

1. A. M. BOWMAN, D.L.S., Pittsburgh, Pa.
Pennsylvania Contracting Co.
1. E. B. HERMON, D. & O.L.S., Vancouver, B.C.
Assistant Engineer Vancouver Power Co.
1. ROBERT LAIRD, O.L.S., Haileybury, Ont.
Laird & Routley, Engineers and Surveyors.
1. T. KENNARD THOMSON, D.Sc., C.E., M. Can. Soc. C.E., M. Am. Soc. C.E.,
Consulting Engineer. Hudson Terminal Building, New York
1. H. G. TYRRELL, C.E., A.M. Can. Soc. C.E.,
Consulting Engineer. 817 Hinman Ave., Evanston, Ill.

1887.

1. J. C. BURNS (deceased).
1. A. E. LOTT, Los Angeles, Cal.
Consulting Railway Engineer.
1. A. L. McCULLOUGH, O.L.S., B.C.L.S., A.M. Can. Soc. C.E., Nelson, B.C.
Engineer and Surveyor.
1. F. MARTIN, M.B., O.L.S.,
Physician.
1. C. H. PINHEY, D. & O.L.S., 110 Wellington St., Ottawa, Ont.
1. J. ROGERS, O.L.S., Mitchell, Ont.
Town Engineer.

1888.

1. J. F. APSEY, O.L.S., 3 N. Calvert St., Baltimore, Md.
Assistant Division Engineer, Baltimore Sewerage Commission.
1. W. T. ASHBRIDGE, C.E., 1444 Queen St. E., Toronto, Ont.
Engineer and Surveyor.
1. EDWARD F. BALL, A.M., Can. Soc. C.E.,
335 Madison Ave., New York, N.Y.
*Chief Assistant Engineer of Resurveys, Land and Tax Department,
N. Y. Central and Hudson River Railroad.*
1. D. B. BROWN, O.L.S., Quebec, P.Q.
Locating Engineer, Transcontinental Ry. (G.T.P.)
1. C. M. CANNIFF,
On Overseas Service.
1. H. J. CHEWETT, B.A.Sc., C.E., A.M. Can. Soc. C.E.,
Cold Ash, Newbury, England
1. J. GIBBONS, D. & O.L.S., Ottawa, Ont.
Surveying Staff, Department of Interior.
1. R. McDOWALL, O.L.S., C.E., A.M. Can. Soc. C.E., Owen Sound, Ont.
Town Engineer.
1. G. W. McFARLEN, O.L.S., Toronto, Ont.
City Engineer's Staff.
1. C. J. MARANI, Anacortes, Wash.
Designing and Consulting Structural Engineer for the Russia Cement Co.
1. G. R. MICKLE, B. A., Toronto, Ont.
Mine Assessor, Province of Ontario.
1. J. H. MOORE, O.L.S., Smith's Falls, Ont.
Town Engineer.
1. G. H. RICHARDSON, 21 Dunvegan Rd., Toronto, Ont.

1888—Continued.

1. K. ROSE, Curry Bldg., Toronto, Ont.
Manager, Evans Rotary Engine Co. of Canada.
1. J. E. ROSS, D. & O.L.S., Kamloops, B.C.
Surveying Staff, Department of Interior.
1. C. H. C. WRIGHT, B.A.Sc., Toronto, Ont.
Professor of Architecture, University of Toronto.

1889.

1. B. CAREY, Toronto, Ont.
1. W. J. CHALMERS, Vanport, Beaver Co., Pa.
1. W. J. CHALMERS, 13012 104th Ave., Edmonton, Alta.
Consulting Engineer.
1. W. A. CLEMENT, M. Can. Soc. C.E., South Vancouver, B.C.
Municipal Engineer.
1. G. F. HANNING, Toronto, Ont.
Divisional Engineer, C.N.R.
1. H. E. T. HAULTAIN, C.E., Asso. Mem., I.C.E., M.I.M.M., M. Can. Soc. C.E., Toronto, Ont.
Professor of Mining Engineering, University of Toronto.
1. J. IRVINE (deceased).
1. D. D. JAMES, B.A., B.A.Sc., 6 Leuty Ave., Toronto, Ont.
Surveyor.
1. F. X. MILL (deceased).
1. H. K. MOBERLEY, D. & S.L.S., Yorkton, Sask.
District Engineer and Surveyor.
1. T. R. ROSEBRUGH, M. A., Toronto, Ont.
Professor of Electrical Engineering, University of Toronto.
1. T. WICKETT, M.D., 25 Nightingale St., Hamilton, Ont.
Physician.

1890.

5. W. E. BOUSTEAD (deceased).
1. F. M. BOWMAN, O.L.S., C.E., Pittsburgh, Pa.
Blaw Steel Const. Co.
1. M. A. BUCKE, M.E. (deceased).
1. G. D. CORRIGAN (deceased).
1. J. A. DUFF, B.A. (deceased).
1. A. B. ENGLISH (deceased).
1. N. L. GARLAND, 76 Wellington St. W., Toronto, Ont.
1. J. HUTCHEON, O.L.S., Parliament Bldgs., Toronto, Ont.
Dept. of Lands, Forests and Mines.
1. W. L. INNES, O.L.S., C.E., Simcoe, Ont.
Manager, Dominion Cannery, Ltd.
1. E. B. MERRILL, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E. Toronto, Ont.
Engineer, H.E.P.C.
1. J. R. PEDDER (deceased).
3. R. A. ROSS, E.E., 80 St. Francois Xavier St., Montreal, Que.
Consulting Electrical and Mechanical Engineer.
1. T. H. WIGGINS, O.L.S., Saskatoon, Sask.
Civil Engineer and Dom. Land Surveyor.
1. W. J. WITHROW,
On Overseas Service.

1891.

1. H. J. BEATTY, O.L.S., Pembroke, Ont.
Engineer and Surveyor.
1. T. R. DEACON, O.L.S., M. Can. Soc. C.E., Winnipeg, Man.
President and General Manager, Manitoba Bridge & Iron Works, Ltd.
1. C. W. DILL, M. Can. Soc. C.E., Winnipeg, Man.
General Manager, The National Paving Co.
5. O. S. JAMES, B.A.Sc., 6 Leuty Ave., Toronto, Ont.
1. A. LANE (deceased).
1. J. E. McALLISTER, B.A.Sc., C.E., 501 Standard Bank Bldg., Toronto, Ont.
Consulting Engineer.
3. E. B. MERRILL, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E., Toronto, Ont.
Engineer, H.E.P.C.
1. J. E. A. MOORE, C.E., Cleveland, O.
Marani & Moore, Consulting, Civil and Mechanical Engineers.
1. W. NEWMAN, O.L.S., A.M., Can. Soc. C.E. Winnipeg, Man.
Consulting Engineer and Contractor.
1. J. K. ROBINSON (deceased).
1. W. B. RUSSEL, 601 Standard Bank Bldg., Toronto, Ont.
Civil Engineer and Contractor.
1. G. E. SILVESTER, O.L.S., M. Am. Inst. M.E., Copper Cliff, Ont.
Chief Engineer, Canadian Copper Co.
1. H. D. SYMMES, Niagara Falls S., Ont.
Engineer and Contractor.

1892.

1. J. R. ALLAN, O.L.S., Renfrew, Ont.
1. T. H. ALISON, B.A.Sc., C.E., Bayonne, N.J.
Secretary and Chief Engineer, Bergen Point Iron Works.
1. A. G. ANDERSON, Port Dover, Ont.
Hardware Merchant.
1. C. FAIRCHILD, D. & O.L.S., 608 Tegler Blk., Edmonton, Alta.
Consulting Engineer and Surveyor.
1. J. B. GOODWIN, B.A.Sc., Toronto, Ont.
Assistant Hydraulic Engineer, H.E.P.C.
4. C. E. LANGLEY, Continental Life Bldg., Toronto, Ont.
Langley & Howland, Architects.
1. A. T. LAING, B.A.Sc., Toronto, Ont.
Secretary and Assistant Professor, Faculty of Applied Science, University of Toronto.
1. E. J. LASCHINGER, B.A.Sc., M.E., Johannesburg, Transvaal, S.A.
Hydraulic and Air Power Engineer, Central Mining and Investment Corporation.
5. W. L. LAWSON, B.A.Sc., Sterling, Col.
Manager Great Western Sugar Co.
3. W. A. LEE, B.A.Sc. (deceased).
1. B. McENTEE, B.A.Sc., 28 Queen St. E., Toronto, Ont.
Stationer.
3. C. G. MILNE, B.A.Sc. (deceased).
1. CHAS. H. MITCHELL, B.A.Sc., C.E., M. Can. Soc. C.E., M. Am. Soc. C.E., Lieut.-Col.,
On Overseas Service.
1. N. L. PLAYFAIR, Vancouver, B.C.
1. J. M. PRENTICE (deceased).
1. J. A. ROSS, Cleveland, Ohio
Designer L. S. & M. S. Railway, Engineering Office.

1892—Continued.

1. ALBERT N. SMITH, Youngstown, Ohio
Engineer, Wm. B. Pollock Co.
1. R. W. THOMSON, B.A.Sc., M.E., c/o University Club, Vancouver,
Mining Engineer. B.C.
3. A. V. WHITE, M.E., Ottawa, Ont.
Engineer, Commission of Conservation.

1893.

1. A. G. ARDAGH, Barrie, Ont.
Land Surveyor and Civil Engineer.
- 4.*H. F. BALLANTYNE, B.A.Sc., 2 West 47th St., New York, N.Y.
Architect.
1. G. L. BROWN, O.L.S., A.M. Can. Soc. C.E., Morrisburg, Ont.
Civil Engineer and Land Surveyor.
- 1.*L. C. CHARLESWORTH, D.L.S., Edmonton, Alta.
Deputy Minister of Public Works.
1. T. H. DUNN, O.L.S., Ottawa, Ont.
Water Power Branch Dept. of the Interior.
1. J. M. R. FAIRBAIRN, P.L.S., Westmount, Que.
Assistant Chief Engineer, C. P. R.
- 4.*W. FINGLAND, 334 Portage Ave., Winnipeg, Man.
Architect.
1. C. FORRESTER, Toronto, Ont.
- 1.*WALTER J. FRANCIS, C.E., M. Can. Soc. C.E., M. Am. Soc. C.E.,
260 St. James St., Montreal, Que.
Walter J. Francis & Co., Consulting Engineers.
- 3.*A. R. GOLDIE, Galt, Ont.
Manager, Goldie & McCulloch Co.
3. S. C. HANLY, Midland, Ont.
Midland Iron Works Co.
- 4.*J. KEELE, A.M., B.A.Sc., Ottawa, Ont.
Ceramic Engineer, Dept. of Mines.
1. J. T. LAIDLAW, B.A.Sc., M.E., Cranbrook, B.C.
Consulting Mining Engineer.
3. F. L. LASH, Bandoeng, Java
Manager, Electrical Supply Co., Board of Trade Building.
1. A. L. McALLISTER, B.A.Sc.,
On Overseas Service.
1. T. J. McFARLEN, Port Arthur, Ont.
Chemist, Antikokan Iron Co.
1. A. J. McPHERSON, B.A.Sc., D.L.S., Regina, Sask.
Deputy Minister of Public Works for Sask.
1. A. F. MACALLUM, B.A.Sc., C.E., Ottawa, Ont.
Commissioner of Works.
1. W. T. MAIN, Silverton, Oregon
Division Engineer, C. & N. W. Ry.
1. V. G. MARANI, C.E., Cleveland, Ohio
Marani & Moore, Consulting, Civil and Mechanical Engineers.
1. W. MINES, B.A.Sc., Chicago, Ill.
Mechanical Engineer, Hoover & Mason.
- 3.*J. M. ROBERTSON, Montreal, P.Q.
Consulting Engineer.

*Diploma with honours.

-1893—Continued.

1. R. K. RUSSEL, 1001 Traders' Bank Bldg., Toronto, Ont.
Railway Contractor.
- 1.*F. N. SPELLER, B.A.Sc., Pittsburgh, Pa.
Metallurgical Engineer, National Tube Co.
1. H. R. SQUIRE, B.A.Sc., O.L.S. (deceased).
1. W. V. TAYLOR, O.L.S., A.M. Can. Soc. C.E., Quebec, P.Q.
Quebec Harbour Commissioners.
- 1.*R. B. WATSON (deceased).

1894.

- 3.*R. W. ANGUS, B.A.Sc., Toronto, Ont.
Professor of Mechanical Engineering, University of Toronto.
1. H. F. BARKER, Toronto, Ont.
1. A. T. BEAUREGARD, B.A.Sc., Darien, Conn.
1. A. E. BERGEY, Pittsburgh, Pa.
Assoc. Professor, Carnegie Inst. of Technology.
3. D. G. BOYD, Toronto, Ont.
Department of Lands and Mines, Parliament Buildings.
3. W. A. BUCKE, Toronto, Ont.
District Manager, Canadian General Electric Co.
1. J. CHALMERS, O.L.S., A.M. Can. Soc. C.E., Edmonton, Alta.
Consulting Engineer, 13012 104th Avenue.
- 4.*J. A. EWART, B.A.Sc., 415 Booth Bldg., Ottawa, Ont.
Architect.
3. W. J. HERALD, B.A.Sc., 190 Whitney Ave., Sydney, N.S.
3. H. E. JOB, B.A.Sc., Hamilton, Ont.
Manager, Toronto and Hamilton Electric Co.
1. S. M. JOHNSON, B.A.Sc., B.C.L.S.
On Overseas Service.
3. A. C. JOHNSTON, B.A.Sc., M.E., Philadelphia, Pa.
Vice-President and Chief Engineer, The J. M. Dodge Co.
1. J. E. JONES, Toronto, Ont.
Street Cleaning Dept., City Hall.
3. N. M. LASH, Montreal, P.Q.
Chief Engineer, Bell Telephone Co.
- 1.*A. L. MCTAGGART, B.A.Sc., 703 Arch St., Pittsburg, Pa.
Mechanical Engineer.
- 3.*W. MINTY, B.A.Sc., Blackburn, Eng.
With Messrs. Yates & Thom, Ltd., Engineers.
3. C. J. NICHOLSON, Hamilton, Ont.
Assistant Engineer, Toronto, Hamilton & Buffalo Ry.
1. H. ROLPH, Montreal, Que.
Chief Engineer, John S. Metcalf Co., Ltd.
1. J. D. SHIELDS, B.A.Sc., Toronto, Ont.
Sewer Engineer, Staff of City Engineer.
1. ANGUS SMITH, C.E., O.L.S., A.M. Can. Soc. C.E., Prince Albert, Sask.
City Engineer.
3. A. K. SPOTTON, Galt, Ont.
Chief Engineer, Goldie & McCulloch Engine Works.
3. R. T. WRIGHT, B.A.Sc., East Pittsburgh, Pa.
Engineering Department, Westinghouse Machine Co.

*Diploma with honours.

1895.

1. J. ARMSTRONG, B.A.Sc., LePas, Man.
Chief Engineer of the Hudson Bay Ry.
3. A. E. BLACKWOOD, 30 Church St., New York
Manager New York Office, Sullivan Machinery Co.
1. E. J. BOSWELL, D.L.S., Montreal, Que.
With C. P. R.
3. G. BREBNER (deceased).
3. W. M. BRODIE, B.A.Sc.,
On Overseas Service.
3. L. L. BROWN, The Woolworth Bldg., New York
Vice-President, The Foundation Co.
4. R. J. CAMPBELL, Chicago, Ill.
Artist, Chicago Tribune.
3. A. W. CONNOR, B.A., C.E., 36 Toronto St., Toronto, Ont.
Bowman & Connor, Consulting Engineers.
1. J. S. DOBIE, B.A.Sc., O. & D.L.S., Thessalon, Ont.
President, O. L. S. Assoc.
1. F. W. GUERNSEY, Trail, B.C.
Consolidated Mining and Smelting Co.
- 4.*A. H. HARKNESS, B.A.Sc., Toronto, Ont.
*Consulting Structural Engineer, Harkness & Oxley,
Confederation Life Building.*
3. H. S. HULL, B.A.Sc., Johnstown, Pa.
Structural Drawing, Cambria Steel Co.
- 3.*J. MCGOWAN, B.A., B.A.Sc., Toronto, Ont.
Professor of Applied Mechanics, University of Toronto.
3. W. N. MCKAY, Georgetown, Ont.
Manager of Bank of Hamilton.
3. H. L. MCKINNON, B.A.Sc., Cleveland, Ohio
Brown Hoisting Machinery Co.
1. W. W. MEADOWS, D. & O.L.S., Maple Creek, Sask.
Department of Public Works.
1. F. J. ROBINSON, D. & O.L.S., Regina, Sask.
Deputy Minister of Public Works, Saskatchewan.
3. F. T. STOCKING, Toronto, Ont.
Hydro-Electric Commission.
3. R. C. C. TREMAINE, B.A.Sc. (deceased).

1896.

- 2.*J. W. BAIN, B.A.Sc., Toronto, Ont.
Professor of Chemical Engineering, University of Toronto.
2. L. T. BURWASH, M.E.,
On Overseas Service.
- 3.*G. M. CAMPBELL, Lynn, Mass.
Electric Co.
2. J. A. DECEW, B.A.Sc., McGill Bldg., Montreal, Que.
Chemical Engineer.
- 3.*H. P. ELLIOTT, B.A.Sc., E.E., London, Ont.
Consulting Electrical Engineer.
3. W. C. GURNEY, Toronto, Ont.
Vice-President, Gurney Foundry Co., Ltd.
- 3.*H. V. HAIGHT, B.A.Sc., Sherbrooke, P.Q.
Chief Engineer, Canadian Ingersoll Rand Drill Co. Ltd.

*Diploma with honours.

1896—Continued.

1. W. F. LAING (deceased).
3. R. R. LAWRIE (deceased).
3. C. MACBETH, B.A.Sc. (deceased).
3. J. A. MACMURCHY, 1315 Elm St., Wilkinsburg, Pa.
Chief Draftsman, Turbine Dept., Westinghouse Machine Co.,
1. T. MARTIN, B.A.Sc. Moose Jaw, Sask.
Assistant Divisional Engineer, C. P. R., Western Division.
3. R. R. SCHEIBE, Toronto, Ont.
Sales Manager, Brigidens, Ltd.

1897.

2. E. ANDREWES, B.Sc., A.M.I.C.E., Portmadoc, N. Wales
Resident Engineer, Maenofferen Slate Quarry Co., Ltd.
- 2.*J. A. BOW, Chanaral, Chili, S. America.
c/o Andes Copper Mining Co.
1. H. S. CARPENTER, B.A.Sc., O.L.S., Regina, Sask.
Superintendent of Highways, Department of Public Works.
5. H. W. CHARLTON, B.A.Sc., New York, N.Y.
Patent Expert.
- 4.*E. A. FORWARD, A.M. Can. Soc. C.E., Montreal, Que.
With Haney, Quinlan & Robertson.
- 3.*A. T. GRAY, B.A.Sc., Schenectady, N.Y.
Designing Engineer on Steam Turbines, General Electric Co.
3. W. A. B. HICKS, Philadelphia, Pa.
4. C. F. KING, 356 Main St., Winnipeg, Man.
The Great West Perm. Loan Co.
1. H. W. PROUDFOOT (deceased).
- 2.*A. H. A. ROBINSON, B.A.Sc., M.A.I. M.E., Haileybury, Ont.
Mine Inspector.
4. W. F. SCOTT, Dunnville, Ont.
Structural Engineer and Consulting Architect.
- 3.*W. R. SMILEY, B.A.Sc., Cleveland, Ohio
With Wellman-Seaver-Morgan Engineering Co.
- 2.*W. W. STULL, B.A.Sc., O.L.S., Sudbury, Ont.
Surveyor and Mining Engineer.
- 1.*M. B. WEEKES, B.A.Sc., D.L.S., Regina, Sask.
Department of Public Works.
1. E. A. WELDON, 711 McIntyre Block, Winnipeg, Man.
Investment Broker.

1898.

1. W. H. BOYD, B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.
2. W. E. H. CARTER, B.A.Sc., Box 248, Wilkie, Sask.
Consulting Mining Engineer.
3. E. H. DARLING, M.E., A.M. Can. Soc. C.E., Hamilton, Ont.
Resident Engineer East Hamilton Plant, Hamilton Bridge Works Co.
1. W. F. GRANT, B.A.Sc., Sault Ste. Marie, Ont.
City Engineer.
1. J. S. KORMANN, B.A.Sc., Toronto, Ont.
Manager, Kormann Brewing, Ltd.

*Diploma with honours.

1898—Continued.

3. J. E. LAVROCK, Vancouver, B.C.
Draftsman, Hermon & Burwell.
4. D. MACKINTOSH, B.A.Sc., B.Arch., Bennington, Vt.
Chief Superintendent F. M. Andrews & Co., Metropolitan Tower.
- 1.*F. W. MCNAUGHTON, O.L.S., Calgary, Alta.
C.P.R., Dept. of Natural Resources.
1. J. H. SHAW, O.L.S., North Bay, Ont.
Surveyor and Engineer.
3. A. E. SHIPLEY, B.A.Sc., Nelson, B.C.
Manager, Nelson Coke & Gas Co.
- 3.*F. C. SMALLPIECE, B.A.Sc., 1233 2nd St. E., Calgary, Alta.
Chief Engineer, General Supplies Co.
- 1.*R. W. SMITH, P.L.S., Revelstoke, B.C.
Surveyor.
- 1.*J. A. STEWART, M.A., Toronto, Ont.
Chief Engineer, Toronto Structural Steel Co.
- 1.*H. L. VERCOE, 109 McCaul St., Toronto, Ont.
3. T. A. WILKINSON, New York, N.Y.
Statistician, Westinghouse Church Kerr Co.
3. D. A. WILLIAMSON, B.A.Sc., Hamilton, Ont.
With Hamilton Bridge Works Co.

1899.

- 3.*T BARBER, Meaford, Ont.
Hydraulic Engineer, Chas. Barber & Sons.
2. J. T. M. BURNSIDE, B.A.Sc. (deceased).
3. L. B. CHUBBUCK, B.A.Sc., E.E., Hamilton, Ont.
Engineer, Canadian Westinghouse Co.
2. G. A. CLOTHIER, Stewart, B.C.
Mining Engineer and Surveyor.
1. C. COOPER, Carlyle, Sask.
2. R. W. COULTHARD, B.A.Sc.,
On Overseas Service.
3. J. A. CRAIG, B.A.Sc., Toronto, Ont.
Office of Willis Chipman, C.E.
2. J. C. ELLIOTT, Kelso, Ont.
3. W. E. FOREMAN, B.A.Sc., Pittsburgh, Pa.
Construction Dept., Westinghouse Electric and Mfg. Co.
3. E. GUY, B.A.Sc., Toronto, Ont.
- 3.*W. ALMON HARE, B.A.Sc., A.M., Can. Soc. C.E., Toronto, Ont.
President, The Hare Engineering Co.
1. R. LATHAM, B.A.Sc., Hamilton, Ont.
Chief Engineer, T. H. & B. Ry.
3. W. MONDS, B.A.Sc.,
On Overseas Service.
1. J. PATTERSON, B.A., Toronto, Ont.
Physicist, Dominion Observatory.
3. A. S. H. POPE, B.A.Sc., Portland, Oregon
Pope & Wilcox, Electrical and Mechanical Engineers.

*Diploma with honours.

1899—Continued.

2. G. E. REVELL, B.A.Sc. (killed in action, France, 1915).
- 3.*E. RICHARDS, B.A.Sc., Ottawa, Ont.
Customs Appraiser.
3. G. A. SAUNDERS, Toronto, Ont.
Asst. Engineer, Hydro-Electric Commission.
- 1.*T. SHANKS, B.A.Sc., D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
- 1.*D. C. TENNANT, B.A.Sc., Lachine Locks, Que.
Chief Draftsman with Dominion Bridge Co.
3. W. W. VANEVRY, Sault Ste. Marie, Ont.
City Engineer.
3. W. E. WAGNER, B.A.Sc., Toronto, Ont.
Engineer, Toronto Structural Steel Co.
2. G. H. WATT, D.L.S., Ottawa, Ont.
Dominion Land Surveyor.
3. E. YEATES, London, Ont.
Manager, London Manufacturing and Machine Co.

1900.

1. J. L. ALLAN, M. Can. Soc. C.E., Dartmouth, N.S.
Office Engineer, Dartmouth Branch Intercolonial Ry.
2. E. G. R. ARDAGH, B.A.Sc., Toronto, Ont.
Asst. Professor of Applied Chemistry, University of Toronto.
3. J. A. BAIN, Ottawa, Ont.
Structural Engineer, Dept. of Public Works of Canada.
3. J. H. BARLEY, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Electric and Manufacturing Co.
- 2.*M. C. BOSWELL, M.A., Ph.D., Toronto, Ont.
Asst. Professor of Organic Chemistry, University of Toronto.
1. L. T. BRAY, D. & O.L.S., Amherstburg, Ont.
District Engineer and Surveyor.
3. J. CLARK, Toronto, Ont.
Turnbull Elevator Mfg. Co.
2. J. E. DAVISON, B.A.Sc., Winnipeg, Man.
Engineering Staff, Canadian Northern Ry.
3. E. D. DICKINSON, Schenectady, N.Y.
With General Electric Co.
3. G. W. DICKSON, B.A.Sc., Grand Mere, Que.
With Laurentide Paper Co.
- 2.*H. A. DIXON, B.A.Sc., M.L.S., Jasper, Alta.
District Engineer, Canadian Northern Railway.
2. C. H. FULLERTON, O.L.S., New Liskeard, Ont.
Engineer and Surveyor.
3. W. S. GUEST, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.
3. W. HEMPHILL, B.A.Sc., E.E., Buffalo, N.Y.
Superintendent, Cataract Power & Conduit Co.
2. S. E. M. HENDERSON, Toronto, Ont.
Canadian General Electric Co.
3. J. A. HENRY, Schenectady, N.Y.
Designing Engineer, General Electric Co.

*Diploma with honours.

1900—Continued.

2. H. S. HOLCROFT, B.A.Sc., D.L.S. (Died of wounds received in action, France, 1916).
3. H. A. JOHNSON, Toronto, Ont.
Manager, Johnson Oil Engine Co., Ltd.
3. J. C. JOHNSTON, Boston, Mass.
Plant Inspector, Warren Bituminous Paving Co.
- 2.*J. A. JOHNSTON, B.A.Sc., Ignace, Ont.
Contractor.
2. R. E. MCARTHUR, Lethbridge, Alta.
2. J. G. McMILLAN, B.A.Sc., M.E.,
On Overseas Service.
3. L. HAUN MILLER, Cleveland, Ohio
Sales Agent, Bethlehem Steel Co.
2. E. V. NEELANDS, B.A.Sc., New Guiana, S. America
Manager, Peters Mines.
- 1.*E. H. PHILLIPS, D.L.S., Saskatoon, Sask.
Phillips & Phillips, Civil Engineers and Surveyors.
2. J. R. ROAF, B.A.Sc.,
On Overseas Service.
- 3.*C. H. E. ROUNTHWAITE, Sault Ste. Marie, Ont.
Chief Draftsman Algoma Central & Hudson Bay Ry.
2. H. W. SAUNDERS, B.A.Sc., Gary, W.Va.
Division Engineer, U. S. Coal & Coke Co.
1. A. TAYLOR, D.L.S. & M.L.S., Portage la Prairie, Man.
Engineer and Surveyor.
1. W. C. TENNANT, B.A.Sc. (deceased).
2. S. M. THORNE, B.A.Sc.,
On Overseas Service.
1. F. W. THOROLD, B.A.Sc., 2 Toronto St., Toronto, Ont.
F. W. Thorold Co., Ltd., Consulting Engineers and Contractors.
1. H. M. WEIR, B.A.Sc., Saskatoon, Sask.
City Engineer's Office.
3. F. D. WITHROW, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.

1901.

1. R. H. BARRETT, B.A.Sc., O.L.S. (deceased).
3. W. G. BEATTY, Fergus, Ont.
Manager, Beatty Bros., Implement Manufacturers.
3. G. M. BERTRAM, Toronto, Ont.
Business Manager, Canadian Courier.
3. W. J. BOWERS (deceased).
3. E. T. J. BRANDON, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Com.
3. W. P. BRERETON, B.A.Sc., Winnipeg, Man.
City Engineer.
3. J. T. BROUGHTON, Scottdale, Pa.
Chief Engineer, Scottdale Foundry & Machine Co.
- 3.*W. G. CHACE, B.A.Sc., Winnipeg, Man.
Chief Engineer, Greater Winnipeg Water District.
3. A. G. CHRISTIE, M.E. Baltimore, Md.
Assoc. Professor of Mechanical Engineering, Johns Hopkins University

*Diploma with honours.

1901—Continued.

3. J. R. COCKBURN, B.A.Sc., A.M. Can. Soc. C.E.,
On Overseas Service.
1. W. A. DUFF, Moncton, N.B.
Engineer of Bridges, Intercolonial Ry.
- 2.*D. E. EASON, B.A.Sc., Peterboro', Ont.
Division Engineer, Trent Valley Canal.
- 1.*S. GAGNE, B.A.Sc. (deceased).
3. N. R. GIBSON, B.A.Sc., 550 Confederation Life Bldg., Toronto, Ont.
2. A. T. E. HAMER, Wahnapiatae, Ont.
Engineering Staff, Canadian Northern Ry. Co.
1. C. HARVEY, B.A.Sc., D.L.S., C.E., B.C.L.S. Kelowna, B.C.
Consulting Engineer and Surveyor.
2. F. C. JACKSON, La Tuque, Que.
Jackson & Connelly, Contractors, N. T. C. Ry.
- 3.*R. A. LAIDLAW, C.E. Houston, Texas
Engineer and Sales Agent, Trussed Concrete Steel Co.
3. W. C. LUMBERS, Calgary, Alta.
Engineering Staff, C. P. R.
2. A. C. MACDOUGALL,
On Overseas Service.
3. A. T. C. McMASTER, B.A.Sc., Toronto, Ont.
Engineer and Contractor.
1. G. MACMILLAN, Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
- 3.*H. G. McVEAN, B.A.Sc.,
On Overseas Service.
2. W. C. MATHESON, Joliette, Que.
With Mackenzie-Mann & Co.
3. H. T. MIDDLETON, Englewood Cliffs, N.J.
2. J. L. R. PARSONS, B.A., D.L.S.,
On Overseas Service.
1. G. H. POWER, Winnipeg, Man.
Western Canada Rep. of Willis Chipman, C.E.
- 3.*H. W. PRICE, B.A.Sc., Toronto, Ont.
Associate Professor of Electrical Engineering, University of Toronto
1. H. P. RUST, B.A.Sc., A.M. Can. Soc. C.E., San Francisco, Cal.
Great Western Power Co.
3. M. V. SAUER, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Greater Winnipeg Water District.
3. W. H. STEVENSON, B.A.Sc., Monadnock Block, Chicago, Ill.
Secretary Power Plant Specialty Co.
1. R. D. WILLSON (deceased)

1902.

- 3.*H. G. BARBER, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. W. J. BLAIR, B.A.Sc., D. & O.L.S., Calgary, Alta.
3. J. M. BROWN, Pittsburgh, Pa.
With Westinghouse Machine Co., Steam Turbine Dept.

*Diploma with honours.

1902—Continued.

2. W. G. CAMPBELL, Toronto, Ont.
 2. A. R. CAMPBELL (deceased).
 3. C. G. CARMICHAEL (deceased).
 2.*W. CHRISTIE, B.A.Sc., Prince Albert, Sask.
Dominion Land Surveyor.
 2. F. T. CONLON (deceased).
 3. H. V. CONNOR, Hamilton, Ont.
Canadian Westinghouse Co.
 2.*M. T. CULBERT (deceased).
 2. R. CUMMING, Toronto, Ont.
Price, Cumming Brick Co.
 1. W. E. DOUGLAS, B.A., 152 Bay St., Toronto, Ont.
Contractor.
 3.*R. J. DUNLOP, Toronto, Ont.
With Canadian Westinghouse Co.
 2. W. M. EDWARDS, B.A.Sc., Lethbridge, Alta.
Duff & Edwards.
 3. W. ELWELL (deceased).
 2. J. M. EMPEY, B.A.Sc., O.L.S., D.L.S. Calgary, Alta.
Engineer and Surveyor.
 2.*D. L. H. FORBES, M.E. Chuquicamata, Chili, South America
Chief Const. Engineer, Chili Exploration Co.
 1.*A. E. GIBSON, B.A.Sc., Toronto, Ont.
Roger Miller & Sons, Engineers and Contractors.
 3. A. C. GOODWIN, Toronto, Ont.
With Hydro-Electric Power Commission.
 3. C. P. HENWOOD, McKeesport, Pa.
Draftsman, National Tube Co.
 3. D. M. JOHNSTON, Toronto, Ont.
With Hydro-Electric Power Comm.
 2. R. H. KNIGHT, B.A.Sc., D.L.S., Edmonton, Alta.
Driscoll & Knight, Engineers and Surveyors.
 5.*F. L. LANGMUIR, B.A.Sc., Ph.D., Toronto, Ont.
Chemist, M. Langmuir Mfg. Co.
 3. A. H. MCBRIDE, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Commission.
 1. A. L. MCLENNAN, D.L.S.,
On Overseas Service.
 3. J. T. MACKAY, Toronto, Ont.
 3. J. F. S. MADDEN, Toronto, Ont.
Canadian General Electric Co.
 3.*C. H. MARRS, C.E., Hamilton, Ont.
Hamilton Bridge Works.
 3. P. MATHISON, B.A.Sc., East Pittsburgh, Pa.
Westinghouse Electric & Manufacturing Co.
 3. R. S. MENNIE, Pittsburgh, Pa.
With Crucible Steel Co. of America.
 2. H. H. MOORE, D.L.S., A.M. Can. Soc. C.E., Calgary, Alta.
Dominion Land Surveyor and Engineer.
 1.*T. S. NASH, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
 1. G. G. POWELL, B.A.Sc., Toronto, Ont.
Assist. City Engineer.

*Diploma with honours.

1902—Continued.

- 1.*W. F. RATZ, D.L.S. (deceased).
3. H. D. ROBERTSON, B.A.Sc., Toronto, Ont.
Miller, Cumming & Robertson, Engineers and Contractors.
- 3.*D. SINCLAIR, B.A.Sc. (deceased).
- 2.*I. J. STEELE, D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
3. W. H. SUTHERLAND, B.A.Sc., Montreal, Que.
Assistant Chief Engineer, Montreal Water and Power Co.
- 3.*THOS. TAYLOR, 494 Concord Ave., Toronto, Ont.
Des. and Const. Engineer, Bloor Street Viaduct.
- 2.*C. M. TEASDALE, Concord, Ont.
Surveyor.
3. A. A. WANLESS, Sydney Mines, N.S.
Asst. Engineer and Shop Supt. N. S. S. & C. Co.
3. H. J. ZAHN, B.A.Sc., 235 Calumet St., Detroit, Mich.

1903.

3. H. G. ACRES, Toronto, Ont.
Asst. Engineer, Hydro-Electric Power Commission.
1. J. G. R. ALISON, Pittsburgh, Pa.
With Riter-Conley Mfg. Co.
- 3.*H. H. ANGUS, B.A.Sc., Toronto, Ont.
MacMullen, Riley & Durley, Consulting Engineers.
3. J. A. BEATTY, Peterboro', Ont
Morrow & Beatty, Contractors.
- 3.*J. BRESLOVE, Pittsburgh, Pa.
Allis-Chalmers Co.
2. J. H. BURD, O., D., S. & A. L. S., C.E., Saskatoon, Sask.
Engineer and Surveyor.
- 1.*E. L. BURGESS, D.L.S., Kamloops, B.C.
Burgess & Taggart, Surveyors and Engineers.
2. N. A. BURWASH, B.A.Sc.,
On Overseas Service.
1. F. F. CLARKE, D. & O.L.S., A.M. Can. Soc. C.E.,
On Overseas Service.
2. C. L. COULSON,
On Overseas Service.
- 3.*A. E. DAVISON, B.A.Sc., C.E. Toronto, Ont.
Engineering Staff, Hydro-Electric Power Commission.
3. C. J. FENSOM, B.A.Sc., M.E., Hamilton, Ont.
Works Engineer, Otis-Fensom Elevator Co.
- 2.*E. O. FUCE, O.L.S., 84 King Street E., Toronto, Ont.
Engineer and Surveyor.
- 3.*F. A. GABY, B.A.Sc., Toronto, Ont.
Chief Engineer, Hydro-Electric Power Commission.
1. J. C. GARDNER, B.A.Sc., Niagara Falls, Ont.
Consulting Engineer.
3. R. E. GEORGE, Dover, N.H.
Electrical and Gas Engineer, The United Gas & Electric Co.
- 1.*P. GILLESPIE, B.A.Sc., C.E. Toronto, Ont.
Associate Professor of Applied Mechanics, University of Toronto.
1. W. A. GOURLAY, Toronto, Ont.
Engineering Staff, C. P. R.

*Diploma with honours.

1903—Continued.

2. J. F. HAMILTON, B.A.Sc., C.E., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.
2. G. S. HANES, B.A.Sc., O.L.S., North Vancouver, B.C.
Mayor.
2. F. Y. HARCOURT, B.A., Port Arthur, Ont.
Engineer, Public Works Dept.
1. L. J. HAYES, 2434 Niagara Ave., Niagara Falls, N.Y.
- 1.*F. D. HENDERSON, Secy. Board of Examiners for D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
- 5.*J. A. HORTON,
3. J. G. JACKSON, 98 Frontenac St., Kingston, Ont.
3. G. K. JOHNSTON, Pefferlaw, Ont.
Merchant.
1. H. JOHNSTON, O.L.S., Kitchener, Ont.
City Engineer.
3. A. G. LANG, 190 University Ave., Toronto, Ont.
Hydro-Electric Power Commission.
- 1.*A. J. LATORNELL, B.A.Sc.,
On Overseas Service.
- 1.*H. J. MCAUSLAN, B.A.Sc., O.L.S., North Bay, Ont.
Staff of T. & N. O. Ry.
3. J. A. MCFARLANE, B.A.Sc., Hamilton, Ont.
Chief Draftsman, Hamilton Bridge Works Co.
- 1.*A. L. MCNAUGHTON, Prince Rupert, B.C.
With G. T. P. Co.
- 5.*F. G. MARRIOTT, B.A.Sc., Toronto, Ont.
Chemist and Supt. Asphalt Plant, City Testing Laboratory.
- 3.*C. A. MAUS, Paris, Ont.
- 3.*M. L. MILLER, Pittsburgh, Pa.
Draftsman, McClintic-Marshall Construction Co.
3. P. H. MITCHELL, E.E., Toronto, Ont.
Consulting Electrical Engineer, Traders Bank Building.
- 2.*R. H. MONTGOMERY, B.A.Sc., O. and D.L.S., Prince Albert, Sask.
Engineer and Surveyor.
1. F. A. MOORE, Toronto, Ont.
Engineering Dept. C. N. Ry.
3. E. E. MULLINS, Port Limon, Costa Rica
Supt. Motive Power, Northern Ry. Co.
3. I. H. NEVITT, B.A.Sc., Toronto, Ont.
Asst. Engineer, Main Drainage Dept., City Hall.
1. E. W. OLIVER, B.A.Sc., C.E.,
Assistant to Chief Engineer, Canadian Northern Ry. System.
3. J. P. OLIVER,
On Overseas Service.
3. J. D. PACE, B.A.Sc.,
3. B. B. PATTEN, B.A.Sc.,
On Overseas Service.
2. D. H. PHILP, Ottawa, Ont.
Georgian Bay Canal Survey.
- 3.*D. H. PINKNEY, Elyria, O.
National Tube Dept., U. S. Steel Corporation.

*Diploma with honours.

1903—Continued.

2. T. H. PLUNKETT, B.A.Sc., Meaford, Ont.
Dominion Land Surveyor.
1. D. F. ROBERTSON, D.L.S.,
On Overseas Service.
- 3.*H. M. SCHEIBE, B.A.Sc., 10 Adelaide Rd., Somerville, Mass.
Supt., E. F. Delisle Co.
- 1.*H. L. SEYMOUR, B.A.Sc., D.L.S., Box 151, Ottawa, Ont.
Sanitary Engineer.
1. J. H. SMITH, D. & O.L.S., 140 Jasper Ave. West, Edmonton, Alta.
Engineer and Surveyor.
3. H. G. SMITH, B.A.Sc. (deceased).
3. S. L. TREES, B.A.Sc., Whitby, Ont.
Manager, Samuel Trees & Co.
2. J. E. UMBACH, Victoria, B.C.
Chief Draftsman, Lands Dept., Department of the Interior.
1. J. WALDRON, D.L.S., Moose Jaw, Sask.
Engineer and Surveyor.
- 3.*S. B. WASS, Fredericton, N.B.
Supt. St. John & Quebec R.R.
3. J. A. WHELIHAN, Box 165, Regina, Sask.
3. H. F. WHITE, London, Ont.
Assistant Superintendent, The Geo. White & Sons, Co., Ltd.
- 2.*C. G. WILLIAMS, B.A.Sc., Porcupine, Ont.
Hollinger Mine.
- 1.*N. D. WILSON, B.A.Sc., Toronto, Ont.
Toronto Harbour Commission.
- 1.*C. R. YOUNG, B.A.Sc., C.E., Mem. Can. Soc. C.E., Toronto, Ont.
Asst. Professor in Structural Engineering, University of Toronto.

1904.

- 3.*J. H. ALEXANDER, B.A., C.E., A. M. Am. Soc. C.E., Winnipeg, Man.
Engineer and Contractor.
- 3.*J. H. BARRETT, Toronto, Ont.
With the Wm. Davies Co., Ltd.
3. M. B. BONNELL,
On Overseas Service.
3. T. D. BROWN, B.A.Sc., Calgary, Alta.
Canadian Fairbanks Co.
1. R. J. BURLEY, Ottawa, Ont.
Dept. of the Interior.
3. F. W. BURNHAM, B.A.Sc.,
On Overseas Service.
3. J. W. CALDER, B.A.Sc., Fort William, Ont.
With Hydro-Electric Commission.
1. N. C. CAMERON, 4172 Dorchester St., Montreal, Que.
Dominion Engineering and Construction Co.
1. A. J. CAMPBELL, B.A.Sc., Collingwood, Ont.
- 3.*A. M. CAMPBELL, B.A.Sc., M.E., Weston, Ont.
Erection Engineer, Toronto Structural Steel Co.
4. J. B. CHALLIES, C.E., Ottawa, Ont.
Supt., Water Power Branch, Department of the Interior.
2. C. A. CHILVER, Walkerville, Ont.

*Diploma with honours.

1904—Continued.

2. H. L. CHILVER, Windsor, Ont.
Assistant City Engineer.
1. U. W. CHRISTIE, B.A.Sc., O.L.S., Orangeville, Ont.
Wheelock & Christie, Civil Engineers.
2. P. C. COATES, B.A.Sc., Victoria, B.C.
D. and B. C. Land Surveyor.
1. S. B. CODE, O.L.S., Smith's Falls, Ont.
Civil Engineer and Land Surveyor.
- 1.*T. F. CODE, B.A.Sc. (deceased).
- 1.*W. A. COWAN, Cochrane, Ont.
Division Engineer, Transcontinental Railway.
- 3.*S. E. CRAIG, B.A.Sc., Snelgrove, Ont.
- 1.*S. R. CRERAR, B.A.Sc., O.L.S., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. W. M. CURRIE, Hamilton, Ont.
General Manager, Burlington Steel Co., Ltd.
3. H. H. DEPEW, Fernie, B.C.
Supt. Crow's Nest Pass Electric Light and Power Co.
2. A. J. ELDER, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. J. G. FLECK, Vancouver, B.C.
Fleck Bros., Ltd.
- 1.*A. L. FORD, B.A.Sc., Prince Rupert, B.C.
Government Inspector, Dept. of Railways and Canals.
3. W. S. GIBSON, B.A.Sc., 38 Park Rd., Toronto, Ont.
1. J. N. GOODALL, Toronto, Ont.
Engineer, Niagara and Ontario Construction Co.
1. J. P. GORDON, Box 266, Dauphin, Man.
Engineering Staff, Willis Chipman, C.E.
3. W. W. GRAY, B.A.Sc., Toronto, Ont.
Inspector, Fairbanks Morse Co.
3. A. GRAY, B.A.Sc.,
On Overseas Service.
3. W. K. GREENWOOD, B.A.Sc., Orillia, Ont.
Town Engineer.
1. L. D. HARA, St. Catharines, Ont.
Assistant Engineer, Welland Canal Co.
3. C. J. HARRIS, B.A.Sc., Brantford, Ont.
With Brantford Screw Co.
1. J. B. HERON, B.A.Sc.,
On Overseas Service.
1. E. M. M. HILL, Edmonton, Alta.
Engineering Dept. Canadian Northern Railway.
2. S. N. HILL, C.E., 325 Waverly St., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. C. J. INGLES,
On Overseas Service.
1. E. A. JAMES, B.A.Sc., C.E., Toronto, Ont.
Engineer, York County Highway Commission.
1. P. V. JERMYN, B.A.Sc., 118 King St. West, Toronto, Ont.
C. P. R. Construction Department.
3. W. S. H. KEEFE, Fort Covington, N.Y.
Manager, Light, Heat and Power Co.
3. W. J. LARKWORTHY (deceased).

*Diploma with honours.

1904—Continued.

3. O. B. McCUAIG, B.A.Sc.,
On Overseas Service.
1. G. G. McEWEN, B.A.Sc., Winchester, Ont.
Office of T. H. Dunn, O.L.S.
- 1.*W. G. McFARLANE, B.A., B.A.Sc., 55 Elliott St., Toronto, Ont.
Engineer and Surveyor, Peace River Dist.
- 3.*C. P. McGIBBON, B.A., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. McKAY, B.A.Sc. (deceased).
1. D. McMILLAN, Edmonton, Alta.
With C.N.R.
3. G. J. MANSON, M.E., Penetang, Ont.
Engineer, Grenville Board Co.
- 1.*W. N. MOORHOUSE,
On Overseas Service.
3. E. E. MOORE, Toronto, Ont.
Hydro-Electric Power Commission.
3. W. H. MUNRO,
On Overseas Service.
3. G. PACE, B.A.Sc., Midland, Ont.
With Simcoe Ry. and Power Co.
3. W. S. PARDOE, B.A.Sc., Philadelphia, Pa.
Asst. Prof. in Civil Engineering, University of Pennsylvania.
3. J. PARIS, North Bay, Ont.
c/o S. B. Clement, T.N.O. Ry.
1. J. PARKE, B.A.Sc., Havilah, Ont.
Chemist and Assayer.
3. W. J. PEAKER, Ottawa, Ont.
Topographical Surveys Branch, Dept. of the Interior.
- 3.*A. E. PICKERING, Sault Ste. Marie, Ont.
Manager, Tagona Light and Power Co.
1. D. L. C. RAYMOND, B.A.Sc., Montreal, Que.
The Raymond Construction Co., Ltd.
1. F. B. REID, B.A.Sc., Ottawa, Ont.
Astronomical Surveys Branch, Dept. of the Interior.
- 3.*M. R. RIDDELL, B.A.Sc., 86 Spadina Rd., Toronto, Ont.
Canadian Aeroplanes and Motors, Ltd.
1. L. H. ROBINSON, Moncton, N.B.
Asst. Engineer, Canadian Government Railways.
3. G. S. ROXBURGH, B.A.Sc., Winnipeg, Man.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
2. F. N. RUTHERFORD, B.A.Sc.,
On Overseas Service.
3. P. M. SAUDER, 513 8th Ave. W., Calgary, Alta.
- 1.*J. D. SHEPLY, B.A.Sc., D.L.S. N. Battleford, Sask.
District Surveyor and Engineer.
3. F. W. SLATER, B.A.Sc., Schenectady, N.Y.
With General Electric Co.
- 3.*R. S. SMART, M.E., Ottawa, Ont.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. D. A. SMITH, B.A.Sc., D. & S. L. S.,
On Overseas Service.
3. W. J. SMITHER, B.A.Sc., Toronto, Ont.
Lecturer in Structural Engineering, University of Toronto.

*Diploma with honours.

1904—Continued.

3. S. E. THOMSON, B.A.Sc., Niagara Falls, Ont.
Engineering Staff, Electrical Development Co.
3. C. J. TOWNSEND, B.A.Sc., 79 Spadina Ave., Toronto, Ont.
Wilson, Townsend & Saunders.
1. D. T. TOWNSEND, B.A.Sc., O.L.S., Calgary, Alta.
Chief Surveyor, Dept. of Natural Resources, C.P.R.
1. A. V. TRIMBLE, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
3. B. B. TUCKER, B.A.Sc., Morrisburg, Ont.
Resident Engineer, New York and Ontario Power Co.
- 2.*E. WADE, B.A., Welland, Ont.
Builder.
- 1.*E. W. WALKER, B.A.Sc. (deceased).
3. J. P. WATSON, B.A.Sc., Montreal, Que.
With Dominion Bridge Co. Ltd.
1. J. M. WEIR, Toronto, Ont.
Sec.-Treasurer, The Toronto Plate Glass Importing Co., Ltd.
- 1.*A. F. WELLS, O.L.S., B.A.Sc., Toronto, Ont.
Wells & Gray, Ltd., Engineers and Contractors.
1. W. R. WORTHINGTON, B.A.Sc., Toronto, Ont.
Assistant Sewer Engineer, Staff of City Engineer.
3. W. F. WRIGHT, Toronto, Ont.
Ontario Manager, Eugene F. Phillips Electrical Works.

1905.

2. H. W. ARENS (deceased).
3. R. H. ARMOUR, 345 Jarvis Street, Toronto, Ont.
- 3.*C. B. AYLESWORTH, Hamilton, Ont.
Draftsman, Canadian Westinghouse Co.
- 1.*W. BARBER, B.A.Sc., Toronto, Ont.
Engineer, Waterworks Department, City Hall.
- 2.*W. A. BEGG, B.A.Sc., Regina, Sask.
Department of Public Works.
- 3.*G. G. BELL, Pittsburg, Pa.
West Pennsylvania Traction Co.
1. J. C. BOECKH, Toronto, Ont.
With Boeckh Brush Co.
3. W. M. BRISTOL, Halifax, N.S.
Canadian Westinghouse Co.
2. W. C. CAMPBELL,
On Overseas Service.
3. W. R. CARSON, Cleveland, O.
Engineering Dept., Grasselli Chemical Co.
1. A. V. CHASE, Ottawa, Ont.
Dept. of the Interior.
3. S. R. A. CLEMENT, Toronto, Ont.
With Hydro-Electric Power Commission.
3. T. E. CORRIGAN, New Westminster, B.C.
Electrical Contractor.
- 1.*N. L. R. CROSBY, B.A.Sc., Toronto, Ont.
Contracting Engineer, Toronto Structural Steel Co.
1. G. H. FERGUSON, B.A.Sc.,
On Overseas Service.
3. H. S. FIERHELLER, B.A.Sc. (deceased).

*Diploma with honours.

1905—Continued.

3. F. H. HARRISON, 320 Fifth Ave., New York, N.Y.
Engineer, H. D. Best Co.
1. M. C. HENDRY, B.A.Sc., Winnipeg, Man.
Manitoba Hydrographic Survey.
2. C. S. L. HERTZBERG.
On Overseas Service.
- 3.*W. G. HEWSON, B.A.Sc., Toronto, Ont.
Hydro Electric Power Commission.
1. G. S. JONES, Ottawa, Ont.
Topographical Surveys Br., Dept. of Interior.
- 3.*G. KRIBS, Toronto, Ont.
With H.E.P.C., 190 University Avenue.
2. P. A. LAING,
On Overseas Service.
1. A. LATORNELL, B.A.Sc., Toronto, Ont.
Sewer Department, City Hall.
3. J. W. LEIGHTON, Toronto, Ont.
President, Leighton-Jackes Mfg. Co.
- 1.*T. R. LOUDON, B.A.Sc.,
On Overseas Service.
3. S. E. MCGORMAN, Walkerville, Ont.
Asst. Engineer, Canadian Bridge Co.
- 1.*W. W. MCGREGOR (deceased).
2. D. W. MCKENZIE, Winnipeg, Man.
Draftsman, Engineering Dept. C.N. Ry.
- 3.*C. A. MCLEAN, Toronto, Ont.
Masco Co.
2. W. N. MCLEAN, Erin, Ont.
3. F. G. MACE, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.
3. R. W. MOFFATT, B.A.Sc., Winnipeg, Man.
University of Manitoba.
3. L. W. MORDEN, St. Catharines, Ont.
Packard Electric Co.
3. G. R. MUNRO, B.A.Sc., Peterborough, Ont.
c/o Wm. Hamilton Manufacturing Co.
- 3.*W. G. NICKLIN, B.A.Sc., Grand Rapids, Mich.
Assistant Superintendent, Dalnu & Kiefer Tanning Co.
1. E. D. O'BRIEN, St. Catharines, Ont.
Welland Ship Canal.
- 1.*B. B. PATTEN, B.A.Sc., St. Catharines, Ont.
Rutherford & Patten, Surveyors and Engineers.
1. E. P. A. PHILLIPS, B.A.Sc., O.L.S., Port Arthur, Ont.
Phillips & Benner.
1. W. B. PORTE, Oakville, Ont.
2. E. F. PULLEN,
On Overseas Service.
2. G. L. RAMSEY, B.A.Sc., Sault Ste. Marie, Ont.
Ontario Land Surveyor.
1. G. W. RAYNER, Toronto, Ont.
Ontario Rock Co.
- 3.*R. B. ROSS (deceased).
5. T. E. ROTHWELL, B.A.Sc., Toronto, Ont.
Provincial Assay Office.

*Diploma with honours.

1905—Continued.

- 2.*G. S. SCOTT, 26 Howard St., Toronto, Ont.
 3. H. V. SERSON,
On Overseas Service.
 3. C. H. SHIRRIFF, B.A.Sc., Toronto, Ont.
Chemist, Imperial Extract Co.
 3.*C. E. SISSON, Peterboro', Ont.
Canadian Gen. Electric Co.
 1. D. L. N. STEWART, B.A.Sc.,
On Overseas Service.
 1. M. A. STEWART, Toronto, Ont.
Assistant Engineer, Roadway Dept., City Hall.
 3.*W. F. STUBBS, Galt, Ont.
Assistant Engineer, Goldie & McCulloch Co.
 1. N. H. STURDY, Youngstown, O.
Trussed Concrete Steel Co.
 1. W. G. SWAN, B.A.Sc., C.E.,
On Overseas Service.
 1.*F. H. SYKES, O.L.S., D.L.S., Toronto, Ont.
City Architect's Dept., City Hall.
 3. L. R. THOMSON, B.A.Sc., Ottawa, Ont.
With Dominion Bridge Co.
 3. E. D. TILLSON, B.A.Sc., 502 Webster Building, Chicago, Ill.
 1.*J. J. TRAILL, B.A.Sc., Toronto, Ont.
Lecturer in Mechanical Engineering, University of Toronto.
 1.*W. M. TREADGOLD, B.A., Toronto, Ont.
Asst. Professor in Surveying, University of Toronto.
 3. W. E. TURNER, B.A.Sc., Salt Lake City, Utah
With Utah Light & Ry. Co.
 3. A. E. UREN, Toronto, Ont.
Editor, Acton Publishing Co.
 3. J. M. VAUGHAN, 58 Melville Ave., Toronto, Ont.
Contractor.
 1. H. L. WAGNER, B.A.Sc., Toronto, Ont.
Chief Draftsman, Toronto Structural Steel Co., Ltd.
 2. W. H. YOUNG, B.A.Sc., D.L.S., Calgary, Alta.
District Engineer.

1906.

1. F. ALPORT, B.A.Sc., D.L.S.
On Overseas Service.
 3.*W. L. AMOS, Toronto, Ont.
Hydro-Electric Power Commission.
 1. A. H. ARENS, Inverness, N.S.
Resident Engineer, Inverness Ry. & Coal Co.
 3.*J. C. ARMER, B.A.Sc., Toronto, Ont.
On Overseas Service.
 1. M. H. BAKER, B.A.Sc., Toronto, Ont.
With Canadian Fire Underwriters Ass'n.
 3. F. W. BALDWIN,
On Overseas Service.
 2. E. W. BANTING, B.A.Sc., Toronto, Ont.
Lecturer in Surveying, University of Toronto.

*Diploma with honours.

1906—Continued.

3. F. BARBER, 57 Adelaide St. East, Toronto, Ont.
York County Engineer.
2. M. BATES, B.A.Sc. (deceased).
2. J. P. BELLISLE (deceased).
- 3.*H. H. BETTS, B.A.Sc.,
On Overseas Service.
- 5.*D. E. BEYNON, B.A.Sc., Toronto, Ont.
General Supt., Dunlop Tire and Rubber Goods Co.
2. G. W. BISSETT, Naughton, Ont.
Mill Supt., Canadian Exploration Co., Ltd.
3. W. C. BLACKWOOD, B.A.Sc., Toronto, Ont.
Instructor, Technical High School.
3. H. E. BRANDON, B.A.Sc.,
On Overseas Service.
1. M. E. BRIAN, B.A.Sc., O.L.S., A.M. Can. Soc. C.E., Windsor, Ont.
City Engineer.
2. F. C. BROADFOOT, Vancouver, B.C.
Broadfoot, Johnston & Hamilton.
2. T. W. BROWN, B.A.Sc., D., S. & A.L.S., A.M. Can. Soc., C.E.,
Brown & Loucks, Civil Engineers. Saskatoon, Sask.
- 1.*A. E. K. BUNNELL, B.A.Sc., Toronto, Ont.
Engineer, Civic Transportation Committee.
3. F. M. BYAM, Toronto, Ont.
Chief Engineer, McGregor and McIntyre.
3. A. CAMERON, Winnipeg, Man.
Provincial Architect's Office.
3. A. W. CAMPBELL, B.A.Sc., Toronto, Ont.
1. M. J. CARROLL, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
- 3.*R. E. C. CHADWICK, Montreal, Que.
Eastern Manager, The Foundation Co., Ltd., of New York.
- 1.*G. T. CLARK, B.A., Toronto, Ont.
Designing Engineer, Toronto Harbour Commission.
- 3.*G. A. COLHOUN, Hamilton, Ont.
Draftsman, The Hamilton Bridge Works Co., Ltd.
- 1.*W. A. M. COOK, B.A.Sc., Toronto, Ont.
Staff of City Architect, City Hall.
- 1.*E. L. COUSINS, B.A.Sc., Toronto, Ont.
General Manager, Harbour Commission.
4. A. G. CREIGHTON, Prince Albert, Sask.
Creighton & Strothers, Architects and Structural Engineers.
4. W. N. DANIELS, Noble Road, Jenkintown, Pa.
- 3.*N. P. F. DEATH, B.A.Sc., Toronto, Ont.
Death & Watson, Electrical Engineers and Contractors.
3. C. S. DUNDASS, B.A.Sc., Lachine, Que.
With Dominion Bridge Co.
3. S. L. FEAR, Toronto, Ont.
With Canada Foundry Co.
- 5.*C. C. FORWARD, 50 Bedford Row, Halifax, N.S.
5. C. W. GRAHAM, B.A.Sc., Toronto, Ont.
Chemist, Dunlop Tire and Rubber Goods Co.,
- 1.*P. W. GREENE,
On Overseas Service.

*Diploma with honours.

1906—Continued.

3. C. B. HAMILTON, B.A.Sc., Toronto, Ont.
Manager, Hamilton Gear and Machinery Co.
- 1.*A. L. HARKNESS, B.A.Sc., Montreal, Que.
St. Lawrence Bridge Co., Ltd.
- 1.*R. L. HARRISON, Toronto, Ont.
 1. E. HARRISON, B.A.Sc., Calgary, Alta.
Consulting Civil Engineer and Surveyor, 513 Beveridge Blk.
3. J. C. HARTNEY, B.A.Sc., Vancouver, B.C.
With Davis Hartney, 315 Rogers Bldg.
1. S. HETT, B.A.Sc., LePas, Man.
Locating Engineer of the Hudson Bay Ry.
3. C. R. HILLIS, Hamilton, Ont.
With Can. Westinghouse Co.
3. C. W. HOOKWAY, B.A.Sc., Hamilton, Ont.
Westinghouse Mfg. Co.
3. R. H. HOPKINS, B.A.Sc.,
On Overseas Service.
- 1.*R. S. HOUSTON, Winnipeg, Man.
With the Dominion Bridge Co.
- 2.*W. HUBER, Toronto, Ont.
With Provincial Highway Commission.
- 3.*A. H. HULL, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
3. W. C. JEPSON, Niagara Falls, Ont.
Welland Canal Office.
- 1.*C. JOHNSTON, B.A.Sc., Oakville, Ont.
Engineer, Toronto-Hamilton Highway Commission.
1. G. R. JONES, B.A.Sc., China
Missionary.
3. T. JONES, B.A.Sc. (Killed in action, France, 1916).
- 1.*A. E. JUPP, B.A.Sc., Toronto, Ont.
3. J. D. KIPPY, 50 Pearl St., Toronto, Ont.
Mechanical Engineer.
1. J. L. LANG, B.A.Sc., D. & O.L.S.,
On Overseas Service.
3. A. P. LINTON, B.A.Sc.,
On Overseas Service.
- 4.*A. WELLESLEY McCONNELL, B.A.Sc.,
On Overseas Service.
- 3.*D. G. McILWRAITH, Galt, Ont.
Draftsman, The Goldie & McCulloch Co., Ltd.
2. J. A. MCKENZIE, Kerrisdale, B.C.
c/o J. A. McKenzie & Co.
- 1.*J. V. McNAB, Moose Jaw, Sask.
Resident Engineer, C.P.R.
3. J. A. McPHERSON, Toronto, Ont.
2. K. A. MACKENZIE, B.A.Sc., Toronto, Ont.
Teacher, Malvern High School.
1. W. C. MACKINNON, Lachine, P.Q.
Dominion Bridge Co.
- 3.*W. MACLACHLAN, B.A.Sc., Toronto, Ont.
Electrical Employers Ass'n., and Hydro Electric Power Commission.
- 3.*D. W. MARRS, 534 Centennial Ave., Sewickley, Pa.

*Diploma with honours.

1906—Continued.

3. W. A. MAXWELL, Winnipeg, Man.
Dominion Bridge Co.
- 1.*REV. J. MELLON MENZIES, B.A.Sc., D.L.S., Wu An Hsien, North
Missionary. Honan, China
3. L. R. MILLER, B.A.Sc., Watrous, Sask.
Supt., Electric Light, Power and Traction Co.
- 1.*B. F. MITCHELL, B.A.Sc., Edmonton, Alta.
Municipal Engineer.
1. F. F. MONTAGUE, Winnipeg, Man.
- 1.*W. J. MOORE, O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.
1. C. R. MURDOCK, B.A.Sc., Burlington, Ont.
Resident Engineer, Chipman and Power.
2. C. J. MURPHY, B.A.Sc., Nova Scotia Bank Bldg., St. Catharines,
Consulting Engineer. Ont.
- 1.*W. P. NEAR, B.A., B.A.Sc., St. Catharines, Ont.
City Engineer.
2. R. NEELANDS, Port Hammond, B.C.
3. D. G. PARK, B.A.Sc., 92 Arlington St., Winnipeg, Man.
Engineer, Waldron Co., Ltd., Heating Engineers.
3. G. W. PATERSON, 800 Poyntz Ave., Manhattan, Kansas.
5. R. E. PETTINGILL, Port Colborne, Ont.
Chief Chemist, Canada Cement Co.
- 2.*R. C. PURSER, B.A.Sc., 213 Fifth Ave., Ottawa, Ont.
Office of Surveyor General.
3. N. R. ROBERTSON, B.A.Sc.,
On Overseas Service.
1. J. O. RODDICK, B.A.Sc., Brantford, Ont.
Contractor.
1. C. H. ROGERS, B.A.Sc.,
On Overseas Service.
- 2.*O. ROLFSON, M.A.Sc., D.L.S., O.L.S.,
On Overseas Service.
1. R. C. ROSS, B.A.Sc., Ottawa, Ont.
Department of the Interior.
1. K. G. ROSS, Sault Ste. Marie, Ont.
Lang & Ross, Engineers and Surveyors.
- 1.*H. T. ROUTLY, O.L.S., D.L.S., Haileybury, Ont.
Routly & Summers, Engineers and Surveyors.
2. J. H. RYCKMAN, Toronto, Ont.
Railway and Bridge Dept., City Hall.
- 3.*W. K. SANDERS, 58 Webster St., West Newton, Mass.
- 1.*W. A. SCOTT, B.A.Sc., D.L.S., Galt, Ont.
Dominion Land Surveyor.
- 1.*W. M. STEWART, B.A.Sc., Saskatoon, Sask.
Phillips, Stewart & Lee.
2. J. E. THOMSON, B.A.Sc., W. Virginia, U.S.A.
With Sterling Coal Co.
- 3.*C. L. VICKERY (deceased).
5. W. E. WICKETT (deceased).
- 3.*J. N. WILSON, B.A.Sc.,
On Overseas Service.
- 3.*E. M. WOOD, B.A.Sc., 136 Lee Ave., Toronto, Ont.
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*Diploma with honours.

1907.

- 3.*F. G. ALLEN, B.A.Sc., 642 West 10th Street, Erie, Pa.
 1. F. J. ANDERSON, B.A.Sc.,
On Overseas Service.
 1. A. P. AUGUSTINE,
On Overseas Service.
 3.*H. D. BOWMAN, B.A.Sc., Y.M.C.A., Brooklyn, N.Y.
 3. W. S. BRADY, B.A.Sc., 413 Palmerston Ave., Toronto, Ont.
 1. G. H. BROUGHTON, 176 Montrose Ave., Toronto, Ont.
 1. J. A. BROWN, B.A.Sc., Vancouver, B.C.
Trussed Concrete Steel Co.
 1. W. J. BRUCE, Sault Ste. Marie, Ont.
Dept. of Public Works.
 1. C. E. BUSH, B.A.Sc.,
On Overseas Service.
 3. J. H. CASTER, Toronto, Ont.
Hydro-Electric Power Commission.
 1.*E. CAVELL, Toronto, Ont.
 1.*C. B. B. CONNELL, St. Kitts, B.W.I.
 3.*G. C. COWPER, B.A.Sc., Welland, Ont.
Topographical Surveys in Sask.
 2. J. V. CULBERT, B.A.Sc., Cobalt, Ont.
Buffalo Mines.
 3.*R. S. DAVIS, B.A.Sc., Calgary, Alta.
Sales Engineer, Canadian Westinghouse Co.
 3. S. D. EVANS, B.A.Sc., Leamington, Ont.
 3.*F. R. EWART, B.A.Sc., Toronto, Ont.
Ewart & Jacob, Excelsior Life Building.
 1. G. R. S. FLEMING,
On Overseas Service.
 6. P. C. FUX, B.A.Sc., Brantford, Ont.
With Watrous Engine Works Co.
 1. J. S. GALLETLY, B.A.Sc., Brooklin, Ont.
 2. G. GALT, B.A.Sc., (killed in action, France, 1916).
 1. A. B. GARROW, B.A.Sc.,
On Overseas Service.
 1. A. GILLIES, B.A.Sc.,
On Overseas Service.
 1. G. W. GRAHAM, Eugenia, Ont.
 3. C. S. GRASETT, B.A.Sc., Barrie, Ont.
 1.*R. E. W. HAGARTY, B.A.Sc., 662 Euclid Avenue, Toronto, Ont.
Industrial Engineer.
 3. K. HALL, B.A.Sc.,
On Overseas Service.
 1. C. T. HAMILTON, B.A.Sc., 142 Hastings St. W., Vancouver, B.C.
Johnston and Hamilton.
 3. R. A. HARE, St. Catharines, Ont.
With Canadian Crocker Wheeler Co.
 1. H. F. H. HERTZBERG,
On Overseas Service.
 3.*H. O. HILL, B.A.Sc., 315 Western Ave., Aspinwall, Pa.
 1.*T. H. HOGG, B.A.Sc., C.E., Toronto, Ont.
Asst. Engineer, Hydro-Electric Power Com.

*Diploma with honours.

1907—Continued.

- 3.*C. H. HUTTON, B.A.Sc., Hamilton, Ont.
Engineering Staff, Dominion Power Co.
1. H. M. HYLAND, B.A.Sc., 39 Portland Street, New York, N.Y.
3. E. W. HYMAN, B.A.Sc., London, Ont.
Assistant Superintendent, London Electric Co.
- 3.*L. G. IRELAND, B.A.Sc.,
Chief Engineer, Hydro-Electric System, Eastern Ontario.
- 1.*W. JACKSON, B.A.Sc., Niagara Falls, Ont.
Field Engineer, Ontario Power Co.
- 4.*C. B. JACKSON, Toronto, Ont.
Jackson-Lewis Co.
- 3.*E. W. KAY, B.A.Sc., 517 Bannatyne Ave., Winnipeg, Man.
3. D. F. KEITH, B.A.Sc.,
On Overseas Service.
1. H. P. KEITH, Edmonton, Alta.
Smith & Keith, Alta. Land Surveyors and Engineers.
1. A. A. KINGHORN, B.A.Sc., Toronto, Ont.
Manager, Asphaltic Concrete Co. of Toronto, Ltd.
1. L. W. KLINGER,
On Overseas Service.
- 1.*F. C. LAMB, B.A.Sc., Saskatoon, Sask.
Phillips, Stewart & Lee.
3. A. D. LEPAN, B.A.Sc., Toronto, Ont.
Lieut.-Col., Commandant, School of Instruction, M.D. No. 2.
1. J. H. LINDSAY, S. & D. L. S., Prince Albert, Sask.
Dist. Surveyor and Engineer, Public Works Dept.
3. J. A. D. McCURDY, Toronto, Ont.
Curtiss Aeroplane Co.
- 1.*J. B. McFARLANE, B.A.Sc., Lake Saskatoon, Alta.
Dominion Land Surveyor.
- 3.*D. J. MCGUGAN, B.A.Sc., New Westminster, B.C.
Burnett & McGugan.
3. A. H. McINTOSH, 59 Albany Ave., Toronto, Ont.
3. F. W. McNEILL, B.A.Sc., Calgary, Alta.
Canadian General Electric Co.
- 1.*M. K. McQUARRIE, Kentville, N.S.
Engineer, D.A.R.
- 1.*G. MACLEOD, Edmonton, Alta.
Surveyor.
1. A. G. MACKAY, New York, N.Y.
With Hudson & Manhattan Ry. Co.
1. W. S. MALCOLMSON, B.A.Sc., 163 Havelock Street, Toronto, Ont.
Engineer and Surveyor.
3. S. A. MARSHALL, Welland, Ont.
6. D. H. C. MASON, B.A.Sc.,
On Overseas Service.
1. J. W. MELSON, B.A.Sc., Bell Bert Apts., Toronto, Ont.
Inspector, Brown's Copper and Brass Rolling Mills, Ltd.
1. G. G. MILLS, B.A.Sc.,
On Overseas Service.
3. J. B. MINNS, B.A.Sc., Winnipeg, Man.
Sales Engineer, Canadian General Electric Co.

*Diploma with honours.

1907—Continued

- 4.*G. N. MOLESWORTH,
On Overseas Service.
1. J. M. MOORE, B.A.Sc., London, Ont.
With McClary Mfg. Co.
- 5.*P. F. MORLEY, Toronto, Ont.
Meteorological Office.
1. E. W. MURRAY, B.A.Sc., Regina, Sask.
Dept. of Public Works.
3. J. D. MURRAY, Toronto, Ont.
With Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. E. W. NEELANDS, B.A.Sc., New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. R. E. K. NEELANDS, B.A.Sc.,
On Overseas Service.
- 2.*B. NEILLY, B.A.Sc., M.E., Cobalt, Ont.
Manager, Penn-Canadian Mines.
1. A. E. NOURSE, B.A.Sc., Toronto, Ont.
3. J. J. O'SULLIVAN, Toronto, Ont.
With Canada Railway News Co.
2. T. K. PATON, Wardner, Ida.
Mining Engineer.
1. F. W. PAULIN, O.L.S., Bank of Hamilton Bldg., Hamilton, Ont.
Contractor.
1. R. B. POTTER, B.A.Sc., 235 Garden Ave., Toronto, Ont.
Asst. Engineer, Roadways Dept., City Hall.
- 3.*F. E. PROCHNOW, B.A.Sc., Buffalo, N.Y.
With Wilhelm, Parker & Ward, Patent Attorneys.
- 3.*J. F. PROCUNIER, 1232 Victoria Ave., Vancouver, B.C.
3. G. E. QUANCE, B.A.Sc., Delhi, Ont.
Secy.-Treas. of the Delhi Light & Power Co., Ltd.
- 3.*H. RAINE, Toronto, Ont.
With Prack & Perrine, Architects and Engineers.
- 1.*J. L. RANNIE, B.A.Sc., Ottawa, Ont.
Observer, Geodetic Survey.
3. C. W. B. RICHARDSON, B.A.Sc., Toronto, Ont.
Inspector, Universal Tool Steel Co.
1. A. A. RIDLER, Toronto, Ont.
Supt. Constructing & Paving Co., Ltd.
5. H. E. ROTHWELL, B.A.Sc., Toronto, Ont.
Harris Abattoir Co.
5. C. A. SCHOFIELD, Buffalo, N.Y.
Chemist, Schoellkopf-Hartford & Hanna Co.
- 1.*A. C. T. SHEPPARD, On Overseas Service.
1. F. R. SMITH, B.A., Vancouver, B.C.
3. E. R. SMITHRIM, B.A.Sc., Strathroy, Ont.
- 1.*W. SNAITH, Toronto, Ont.
Secy.-Treas., The Thor Iron Works, Ltd.
3. A. C. SPENCER, B.A.Sc.,
On Overseas Service.
3. G. S. STEWART, Toronto, Ont.
Sales Engineer, Canadian General Electric Co.
1. J. A. STILES, B.A.Sc., Fredericton, N.B.
Professor of Civil Engineering, University of N. B.

*Diploma with honours.

1907—Continued.

- 3.*J. L. STIVER, Ottawa, Ont.
Electrical Standard Laboratory, Inland Revenue Department.
1. J. L. G. STUART, B.A.Sc., Oakville, Ont.
Resident Engineer, Toronto-Hamilton Highway.
1. G. F. SUMMERS, O.L.S., Haileybury, Ont.
Routly & Summers, Engineers and Surveyors.
- 1.*H. W. SUTCLIFFE, New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. P. M. THOMPSON, B.A.Sc., 54 Thorold St., Toronto, Ont.
3. O. R. THOMSON, B.A.Sc., Trenton, Ont.
The Electric Power Co.
1. L. R. THOMSON, B.A.Sc., Ottawa, Ont.
With Dominion Bridge Co.
1. W. J. WALKER, Grant, Ont.
With Transcontinental Ry.
1. E. D. WILKES, B.A.Sc., Toronto, Ont.
Main Drainage Department, City Hall.
3. A. F. WILSON, B.A.Sc., Cleveland, Ohio.
With Cleveland Telephone Co.
3. M. H. WOODS, B.A.Sc., Aylmer West, Ont.
1. G. W. A. WRIGHT, 65 Oakmount Bl., Toronto, Ont.
Supervisor of Prod'ns., Imperial Munitions Bd.
3. J. YOUNG, Box 2973, Winnipeg, Man.
- 3.*A. R. ZIMMER, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.

1908.

3. H. G. AKERS, B.A.Sc., Guelph, Ont.
Malt Products, Ltd.
3. L. F. ALLAN,
On Overseas Service.
- 1.*C. B. ALLISON, O.L.S., South Woodlee, Ont.
- 1.*R. M. ANDERSON, B.A.Sc.,
On Overseas Service.
5. R. J. ARENS, B.A.Sc., Akron, O.
Chemist, Firestone Tire & Rubber Co.
3. H. C. BARBER, B.A.Sc.,
On Overseas Service.
1. E. BARTLETT, B.A.Sc., Medicine Hat, Alta.
Surveyor and Civil Engineer.
2. F. J. BEDFORD (deceased).
- 1.*G. G. BELL, Pittsburg, Pa.
West. Penn. Traction and Power Co. 1st and 2nd National Bk. Bldg.
3. G. E. BLACK, B.A.Sc., Toronto, Ont.
Provincial Secretary's Office.
3. H. F. BOWES, Toronto, Ont.
Superintendent of Warren Bituminous Paving Co., Ltd.
- 3.*J. H. BRACE, 23 Lorne Ave., St. Lambert, P.Q.
Traffic Engineer, Bell Telephone Co.
1. P. R. BRECKEN, B.A.Sc., 275 Broadview Ave., Toronto, Ont.
General Secretary, Y.M.C.A.

*Diploma with honours.

1908—Continued.

3. E. I. BROWN, Toronto, Ont.
Sales Dept., Northern Electric and Manufacturing Co.
1. W. F. M. BRYCE, Ottawa, Ont.
Assistant Engineer, City Engineer's Department.
3. P. H. BUCHAN, B.A.Sc., Vancouver, B.C.
Engineering Department, B.C. Electric Ry. Co., Ltd.
2. J. E. CAMPBELL, B.A.Sc., Coldstream, Ont.
3. N. A. CAMPBELL, 629 4th Street, Edmonton, Alta.
3. A. M. CARROLL, Toronto, Ont.
Sovereign Construction Co., C.P.R. Bldg.
1. H. R. CARSCALLEN, B.A.Sc.,
On Overseas Service.
3. G. CHALLEN, Chedoke P.O., Hamilton, Ont.
1. F. H. CHESNUT, B.A.Sc., Burlingame, Cal.
With Eric Wold, Consulting Engineers.
1. W. E. COLE (deceased).
- 4.*W. C. COLLETT, B.A.Sc., Toronto, Ont.
Construction Engineer, British Acetones, Toronto, Ltd.
1. R. Y. CORY, B.A.Sc.,
On Overseas Service.
- 3.*H. COYNE, B.A.Sc., Racine, Wisc.
With Thomas & Thomas.
- 2.*J. D. CUMMING, B.A.Sc., Copper Cliff, Ont.
Asst. Mech. Supt., with Canadian Copper Co.
6. A. D. DAHL, B.A.Sc., Midland, Mich.
Chemist, Dow Chemical Co.
1. F. A. DANKS, Toronto, Ont.
Engineers' Office, Filtration Plant.
3. J. DARROCH, Detroit, Mich.
Draftsman, Autoparts Mfg. Co.
3. H. C. DOORLY (deceased).
2. R. H. DOUGLAS, Edmonton, Alta.
Department of Public Works.
- 2.*F. C. DYER, B.A.Sc., Toronto, Ont.
Lecturer in Mining Engineering, University of Toronto.
1. F. M. EAGLESON, Winchester, Ont.
Engineer and Surveyor.
1. C. EDWARDS, B.A.Sc., Toronto, Ont.
Sewer Dept., City Hall.
1. S. L. EVANS, B.A.Sc., Corinth, Ont.
Dominion Land Surveyor.
1. E. O. EWING, Toronto, Ont.
With York Co., Engineer.
1. O. L. FLANAGAN, B.A.Sc., Cobalt, Ont.
Engineer.
1. C. FLINT, B.A.Sc.,
On Overseas Service.
1. A. H. FOSTER, B.A.Sc., Guelph, Ont.
With Guelph St. Ry.
3. G. C. FRANCIS, Toronto, Ont.
With Canadian Fire Underwriters Ass'n.
3. S. S. GEAR, Fort Erie, Ont.

*Diploma with honours.

1908—Continued.

1. C. A. GRASSIE, B.A.Sc., Welland, Ont.
- 3.*C. L. GULLEY, B.A.Sc., Toronto, Ont.
Northern Electric and Manufacturing Co.
3. J. W. HACKNER, B.A.Sc., Toronto, Ont.
Asst. Engineer, Dept. of Public Works.
3. F. L. HAVILAND, Hamilton, Ont.
Draftsman, Hamilton Bridge Works Co.
- 1.*C. D. HENDERSON, Walkerville, Ont.
Canadian Bridge Co.
1. E. G. HEWSON, Toronto, Ont.
Division Engineer, Grand Trunk Ry.
- 5.*D. J. HUETHER, B.A.Sc., Toronto, Ont.
With Dunlop Tire and Rubber Co.
1. A. D. HUETHER, B.A.Sc., 47 Highview Cres., Toronto, Ont.
- 3.*A. N. HUNTER, B.A.Sc., Detroit, Mich.
Canadian Inspection Co.
3. S. B. ILER, Vegreville, Alta.
- 1.*J. T. JOHNSTON, B.A.Sc., Ottawa, Ont.
Hydraulic Engineer, Water Power Branch, Dept. of the Interior.
2. H. G. KENNEDY, B.A.Sc.,
On Overseas Service.
- 1.*W. R. KEYS, North Bay, Ont.
T. & N. O. Ry.
3. W. C. KILLIP,
On Overseas Service.
- 3.*J. N. M. LESLIE, B.A.Sc., Toronto, Ont.
With Canadian Westinghouse Co.
3. F. C. LEWIS, Toronto, Ont.
Jackson-Lewis Co.
3. H. R. LYNAR, St. Catharines, Ont.
Welland Ship Canal Office.
- 1.*W. G. McGEORGE, Chatham, Ont.
Consulting Engineer.
1. J. M. MCGREGOR, Chatham, Ont.
McCubbin & McGregor.
1. L. A. McLEAN, B.A.Sc. (deceased).
1. W. A. A. McMASTER, A.S. & D.L.S., Prince Albert, Sask.
1. H. C. McMORDIE, B.A.Sc.,
On Overseas Service.
- 1.*A. A. McROBERTS, B.A.Sc., North Bay, Ont.
T. & N. O. Ry.
- 5.*N. G. MADGE, 406 West 5th Ave., Roselle, N.J.
3. J. E. MALONE, B.A.Sc., Chicago, Ill.
With Illinois Steel Co.
5. K. D. MARLATT,
On Overseas Service.
1. R. J. MARSHALL, B.A.Sc., Toronto, Ont.
Demonstrator in Applied Mechanics, University of Toronto.
5. G. L. MILLIGAN, B.A.Sc., Brampton, Ont.
1. A. B. MITCHELL, Orillia, Ont.
With N. MacLeod, Contractor.
- 4.*J. C. P. MOLESWORTH (deceased).
3. E. D. MONK, B.A.Sc., Cincinnati, Ohio
General Electric Co.

*Diploma with honours.

1908—Continued.

- 3.*F. H. MOODY, B.A.Sc.,
On Overseas Service.
3. J. H. MORICE, B.A.Sc.,
On Overseas Service.
3. F. E. H. MOWBRAY, B.A.Sc.,
Canadian Westinghouse Co. Hamilton, Ont.
- 3.*W. P. MURRAY, B.A.Sc.,
On Overseas Service.
3. W. de C. O'GRADY,
Ford Motor Car Company. Calgary, Alta.
1. H. J. PECKOVER, B.A.Sc.,
Draughtsman, City Hall. 103 Cowan Ave., Toronto, Ont.
- 1.*M. PEQUEGNAT, B.A.Sc.,
Smith & Phillips, Civil Engineers. Kitchener, Ont.
1. H. G. PHILLIPS, D.L.S., S.L.S.,
Smith & Phillips, Civil Engineers. Regina, Sask.
3. M. PIVNICK, B.A.Sc.,
Dentist. Toronto, Ont.
- 1.*E. M. PROCTOR, B.A.Sc.,
James, Loudon & Hertzberg. Toronto, Ont.
- 3.*C. F. PUBLOW, B.A.Sc.,
Toronto Hydro-Electric System. Toronto, Ont.
1. J. T. RANSOM, B.A.Sc.,
Provincial Highways Dept., Parliament Bldgs. Toronto, Ont.
- 1.*W. B. REDFERN, B.A.Sc.,
On Overseas Service.
1. F. L. RICHARDSON, B.A.Sc.,
With Miller, Cummings & Robertson. Toronto, Ont.
3. H. A. RICKER, B.A.Sc.,
Canadian Westinghouse Co. Hamilton, Ont.
1. A. R. ROBERTSON, B.A.Sc.,
On Overseas Service.
5. F. A. ROBERTSON,
With Canada Cement Co. Toronto, Ont.
- 1.*W. A. ROBINSON,
Right-of-Way Surveyor, C.P.R. Winnipeg, Man.
3. R. C. ROBINSON,
With C. N. Ry. Winnipeg, Man.
5. L. J. ROGERS, B.A.Sc.,
Demonstrator in Chemistry, University of Toronto. Toronto, Ont.
- 2.*R. R. ROSE, B.A.Sc.,
On Overseas Service.
3. D. ROSS, B.A.Sc.,
Dominion Savings Bldg. London, Ont.
1. A. O. SECORD,
On Overseas Service. Brantford, Ont.
3. W. E. V. SHAW, B.A.Sc.,
On Overseas Service.
3. H. F. SHEARER, B.A.Sc.,
Toronto Hydro-Electric System. Toronto, Ont.
1. W. L. STAMFORD, B.A.Sc.,
Inspector on Concrete Work, Hydro-Electric Power Plant. Point du Bois, Man.
3. R. H. STARR, B.A.Sc.,
Toronto Hydro-Electric System. Toronto, Ont.
3. A. W. J. STEWART,
Toronto Hydro-Electric System. Toronto, Ont.

*Diploma with honours.

1908—Continued.

3. J. ST. LAWRENCE, Erie, Pa.
General Electric Co.
1. J. J. STOCK, D.L.S.,
On Overseas Service.
1. H. B. STUART, B.A.Sc.,
On Overseas Service.
2. J. L. G. STUART, B.A.Sc., Toronto, Ont.
Railway & Special Works Department, City Hall.
3. A. D. SWORD, B.A.Sc., Toronto, Ont.
Shell Inspector.
3. J. W. R. TAYLOR, B.A.Sc., Campbellford, Ont.
Erecting Engineer for Canadian Westinghouse Co.
- 1.*W. E. TAYLOR, B.A.Sc., 323 Glen Road, Toronto, Ont.
York County Engineer's Office.
3. V. C. THOMAS, B.A.Sc., 34 McRae St., Niagara Falls, Ont.
1. J. H. THORNLEY, B.A.Sc.,
On Overseas Service.
1. C. G. TOMS, B.A.Sc., 56 Spencer Ave., Toronto, Ont.
General Manager, Toms Contracting Co., Ltd.
1. H. W. TYE, Balcarres, Sask.
3. C. P. VAN NORMAN, B.A.Sc.,
On Overseas Service.
1. T. L. VILLENEUVE, Chicoutimi, Que.
Assistant Engineer, Dept. of Public Works.
1. J. A. WALKER, B.A.Sc., McBride, B.C.
- 3.*B. W. WAUGH, B.A.Sc.,
On Overseas Service.
3. R. M. WEDLAKE, B.A.Sc., Brantford, Ont.
With Cockshutt Plow Co., Ltd.
3. R. P. WEIR, Toronto, Ont.
Canadian Manager, Cutter Elec. and Mfg. Co.
1. A. M. WEST, B.A.Sc.,
On Overseas Service.
1. W. R. WHITE, Ottawa, Ont.
Chief Surveyor's Office, Dept. of Indian Affairs.
3. W. J. WHITE, B.A.Sc., Perth, Australia.
With British Thomson Houston Co.
- 3.*F. D. WILSON, B.A.Sc., Detroit, Mich.
1. J. M. WILSON, Toronto, Ont.,
District Engineer, Dept. of Public Works of Canada.
1. D. O. WING, Vancouver, B.C.
City Engineer's Office.
- 3.*R. YOUNG, Vancouver, B.C.
With B.C. Electric Railway Co.

1909.

3. E. G. ARENS, Calgary, Alta.
With Calgary Iron Works.
3. H. V. ARMSTRONG, Estevan, Sask.
Town Engineer.
- 2.*E. T. AUSTIN, B.A.Sc., Coniston, Ont.
With the Mond Nickel Co.
3. W. H. BARRY, B.A.Sc., Niagara Falls, Ont.
Anderson and Barry, Engineers and Surveyors.
3. R. D. S. BECKSTEDT, B.A.Sc., Lacolle, Que.

*Diploma with honours.

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1909—Continued.

3. R. E. BEITH,
On Overseas Service.
- 1.*G. A. BENNETT, B.A.Sc., C.E.,
Topographical Surveys Br., Dept. of the Interior. Ottawa, Ont.
3. E. R. BIRCHARD, B.A.Sc.,
On Overseas Service.
3. W. D. BLACK, B.A.Sc.,
Supt., Otis-Fensom Elevator Co., Ltd. Montreal, Que.
- 3.*D. C. BLIZARD, B.A.Sc.,
Supt. Mechanical Construction, Toronto Power Co. Toronto, Ont.
- 1.*W. J. BOULTON, B.A.Sc.,
Surveyor, Dept. of Interior. Ottawa, Ont.
3. G. H. BOWEN, B.A.Sc.,
Toronto, Ont.
3. C. E. BROWN, B.A.Sc.,
Canadian Westinghouse Co. Hamilton, Ont.
1. E. W. BROWNE, B.A.Sc.,
247 Cannon St. E., Hamilton, Ont.
1. J. A. BUCHANAN,
140 Jasper West, Edmonton, Alta.
3. J. E. BURNS, B.A.Sc.,
231 Seaton St., Toronto, Ont.
1. M. G. CAMERON, B.A.Sc.,
Peterboro', Ont.
- 3.*R. A. CAMPBELL,
With Municipal Lighting Plant. Sault Ste. Marie, Ont.
1. V. S. CHESNUT, B.A.Sc.,
Asst. Engineer, Welland Ship Canal. St. Catharines, Ont.
- 1.*C. G. CLINE, B.A.Sc.,
Assistant Engineer, Dept. of the Interior. Vancouver, B.C.
1. J. G. COLLINSON, B.A.Sc.,
Welland Ship Canal. Port Weller, Ont.
1. G. W. COLTHAM, B.A.Sc.,
Aurora, Ont.
- 3.*H. A. COOCH, B.A.Sc.,
On Overseas Service.
3. W. E. CORMAN,
Supt., Excelsior Electric Mfg. Co., Ltd. Toronto, Ont.
3. T. H. CROSBY, B.A.Sc.,
Sales Engineer, Canadian Westinghouse Co. Vancouver, B.C.
3. R. H. CUNNINGHAM,
Canadian Hoskins Ltd. Walkerville, Ont.
- 1.*F. A. DALLYN, B.A.Sc., C.E.,
Engineer, City Testing Laboratory, Board of Public Health. Toronto, Ont.
3. C. N. DANKS,
Asst. Engineer, Jenckes Machine Co. Sherbrooke, Que.
1. E. M. DANN. (Died of wounds received in action, France, 1916).
3. H. W. DAVIS,
With A. Davis & Son, Ltd., Leather Manufacturers. Kingston, Ont.
- 2.*A. I. DAVIS, B.A.Sc.,
Toronto, Ont.
1. H. C. DAVIS,
Burlington, Ont.
1. I. H. DAWSON,
On Overseas Service.
3. W. H. DELAHAYE, B.A.Sc.,
Patent Office, Dept. of Agriculture. Ottawa, Ont.
- 3.*W. P. DERHAM, B.A.Sc.,
182 Laurier Ave., E., Ottawa, Ont.
- 5.*W. A. DODDS, B.A.Sc.,
Chief Chemist, Penman-Littlehales Chemical Co. Syracuse, N.Y.
1. R. H. DOUGLAS,
Department of Public Works. Edmonton, Alta.
1. M. O. DUFF,
4 Hughson St. S., Hamilton, Ont.

*Diploma with honours.

1909—Continued.

2. L. J. DUTHIE,
On Overseas Service.
1. F. S. FALCONER, B.A.Sc.,
Geological Surveys Br., Dept. of Interior. Ottawa, Ont.
3. T. A. FARGEY, B.A.Sc.,
With Scott Bros. Electric Co. Detroit, Mich.
1. J. B. FERGUSON, B.A.Sc.,
Eng. Dept. C.N.R. Winnipeg, Man.
3. A. T. FERGUSON, B.A.Sc.,
On Overseas Service.
3. T. E. FREEMAN, B.A.Sc.,
Manager, Canadian Hoskins Ltd. Montreal, Que.
3. E. R. FROST, B.A.Sc.,
With H. G. Christman Co., Contractors. 455 King William St., Hamilton, Ont.
1. A. E. GLOVER, B.A.Sc.,
Edmonton, Alta.
5. A. E. GOODERHAM,
With Gooderham & Worts. Toronto, Ont.
1. D. A. GRAHAM, B.A.Sc.,
Track Engineer, C.N.P.R. Chilliwack, B.C.
2. R. R. GRANT,
Contractor, 961½ Gerrard St. E., Toronto, Ont.
1. J. E. GRAY, B.A.Sc.,
On Overseas Service.
1. G. E. D. GREENE, B.A.Sc.,
On Overseas Service.
1. W. H. GREENE,
Assistant City Engineer. Moose Jaw, Sask.
1. W. W. GUNN, B.A.Sc.,
243 Quebec Ave., Toronto, Ont.
3. F. G. HAGERMAN
Cobourg, Ont.
3. C. J. HARPER
Engineer and Surveyor. Collingwood, Ont.
1. D. W. HARVEY, B.A.Sc.,
Canada Foundry Co. Toronto, Ont.
1. C. O. HAY (deceased).
- 3.*J. HEMPHILL,
Construction Engineer, Algoma Steel Corp., Mines Dept. Magpie Mine, Ont.
- 1.*G. HOGARTH,
Chief Engineer of Highways, Dept. of Public Works of Ontario. Toronto, Ont.
3. A. E. HOLMES, B.A.Sc.,
Canadian Westinghouse Co. Montreal, P.Q.
3. C. R. HOLMES, B.A.Sc.,
With Electric Storage Battery Co. Detroit, Mich.
1. G. C. HOSHAL, B.A.Sc.,
Hydro-Electric Power Commission. Niagara Falls, Ont.
3. C. HUGHES, B.A.Sc. (killed in action, France, 1915).
1. A. E. HUNTER, B.A.Sc. (deceased).
3. H. IRWIN, B.A.Sc.,
On Overseas Service.
3. J. ISBISTER, B.A.Sc.,
Onaway Electric Light and Power Co. Onaway, Mich.
3. F. P. JACKES, B.A.Sc.,
On Overseas Service.
- 1.*J. E. JACKSON,
7 Hughson St. S., Hamilton, Ont.
1. E. W. JAMES, B.A.Sc.,
Bridge Engineer, Manitoba Government. Winnipeg, Man.
- 1.*C. C. JOHNSON, B.A.Sc.,
Wallaceburg, Ont.

*Diploma with honours.

1909—Continued

1. C. E. JOHNSTON, B.A.Sc. (deceased).
1. W. J. JOHNSTON, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
- 1.*A. H. E. KEFFER, North Bay, Ont.
With T. & N.O. Ry.
3. J. B. O. KEMP, B.A.Sc., Toronto, Ont.
With Toronto Structural Steel Co.
3. W. R. KEY, B.A.Sc., Toronto, Ont.
Asst. Engineer, Turnbull Elevator Co.
5. H. N. KLOTZ, B.A.Sc. (killed in action, France, 1915).
3. A. W. LAMONT, B.A.Sc., Winnipeg, Man.
Canadian Westinghouse Co.
- 3.*C. B. LANGMUIR, B.A.Sc., Toronto, Ont.
Manager, Electrical Dept., Factory Products, Ltd.
3. A. E. LENNOX, B.A.Sc., Cleveland, Ohio
Publicity Engineer, National Electric Lamp Association.
- 1.*R. W. E. LOUCKS, Regina, Sask.
Provincial Surveys Branch.
1. N. C. A. LLOYD, Toronto, Ont.
Brown & Brown, Surveyors.
3. E. D. MACFARLANE, B.A.Sc., Houston, Texas
With Houston Electric Ry. Co.
1. J. G. MACKINNON, Henningville, B.C.
Resident Engineer, C.N.R.
1. W. A. MACLACHLAN, B.A.Sc.,
On Overseas Service.
3. B. A. MACLEAN, B.A.Sc., Orillia, Ont.
1. N. W. MACPHERSON, B.A.Sc., St. Thomas, Ont.
3. D. D. MCALPINE, B.A.Sc., 387 Markham St., Toronto, Ont.
1. A. S. MCARTHUR, B.A.Sc.,
On Overseas Service.
3. C. R. MCCOLLUM, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
- 3.*A. S. MCCORDICK, B.A.Sc., Sault Ste. Marie, Ont.
Assistant to City Engineer.
3. P. J. MCCUAIG, B.A.Sc.,
On Overseas Service.
3. W. G. MCINTOSH, B.A.Sc., Toronto, Ont.
Herbert Morris Crane and Hoist Co.
1. F. H. MCKECHNIE, B.A.Sc., 216 Wilson Ave., Montreal, Que.
3. J. H. MCKNIGHT Simcoe, Ont.
3. G. MCLEOD, Waupaca, Wis.
Electrician, Electric Light & Ry. Co.
1. V. McMILLAN, B.A.Sc., London, Ont.
With Empire Mfg. Co.
- 3.*A. L. MALCOLM, B.A.Sc., Ottawa, Ont.
Water Power Branch, Dept. of Interior.
3. N. H. MANNING, B.A.Sc., Toronto, Ont.
District Manager, Canadian Insp. & Testing Labs.
- 1.*A. B. MANSON, B.A.Sc., Stratford, Ont.
City Engineer.
1. E. S. MARTINDALE, B.A.Sc., Aylmer, Ont.
Dominion Land Surveyor.

*Diploma with honours.

1909—Continued.

1. O. W. MARTYN, B.A.Sc., D.L.S., S.L.S., Box 443, Swift Current, Sask.
Martyn & MacDonald.
2. C. A. MORRIS, B.A.Sc.,
On Overseas Service.
3. G. MORTON, B.A.Sc., Calgary, Alta.
Canadian Westinghouse Co.
- 1.*F. V. MUNRO, B.A.Sc., Chatham, Ont.
1. E. A. NEVILLE, B.A.Sc., Prince George, B.C.
1. J. NEWTON, B.A.Sc.,
On Overseas Service.
- 3.*L. S. ODELL, Toronto, Ont.
Canadian Inspection and Testing Laboratories.
3. V. J. O'DONNELL, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. J. J. O'HEARN, Fort William, Ont.
Manager, Supply Dept., Canadian General Electric Co.
1. A. W. PAE, Edmonton, Alta.
Davidson & Pae, Real Estate Brokers.
- 1.*A. M. PETRY, B.A.Sc., Toronto, Ont.
Assistant Manager, "Chas. Potter."
3. W. M. PHILP,
On Overseas Service.
1. R. B. PIGOTT, 157 Wentworth St. S., Hamilton, Ont.
2. G. M. PONTON, Ottawa, Ont.
Lt. Imperial Munitions Board, Explosives Dept.
- 3.*C. J. PORTER, B.A.Sc., Dallas, Texas.
With Texas Power and Light Co.
3. A. I. PROCTOR, 852 King St. E., Hamilton, Ont.
1. J. QUAIL, Winnipeg, Man.
Manitoba Bridge and Iron Works.
1. A. F. RAMSPERGER, Toronto, Ont.
With Canada Foundry Co.
- 1.*C. R. REDFERN, B.A.Sc., Toronto, Ont.
Engineer, P. Lyall & Sons, Ltd., Contractors.
- 3.*L. T. RUTLEDGE, B.A.Sc., 320 Concord Ave., Toronto, Ont.
Manager, Excelsior Electric Mfg. Co., Ltd.
1. A. U. SANDERSON, B.A.Sc., 31 Alvin Ave., Toronto, Ont.
- 3.*R. A. SARA, B.A.Sc., E.E., Winnipeg, Man.
Sales Manager, City Light and Power Dept.
- 3.*C. SCHWENGER, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
1. C. A. SCOTT,
On Overseas Service.
1. A. SEDGWICK, Toronto, Ont.
Ontario Dept. of Public Works.
1. B. H. SEGRE, B.A.Sc.,
On Overseas Service.
1. F. V. SEIBERT, B.A.Sc., Edmonton, Alta.
Engineer and Surveyor, Dept. of Interior.
5. M. R. SHAW, B.A.Sc., Waggaman, La.
Chief Chemist, Export Oil Corporation.
3. M. W. SPARLING, B.A.Sc., Cobourg, Ont.
Electric Power Co.

*Diploma with honours.

1909—Continued.

3. J. J. SPENCE, Toronto, Ont.
With Sovereign Construction Co., Ltd.
1. D. S. STAYNER, B.A.Sc., C.E., Toronto, Ont.
Resident Engineer for Harbor Commission.
- *R. B. STEWART, M.A., B.A.Sc.
- 1.*N. C. STEWART, B.A.Sc., Nelson, B.C.
- 1.*P. H. STOCK, 12 Fernwood Park Ave., Toronto, Ont.
1. J. C. STREET, B.A.Sc., St. Catharines, Ont.
Welland Ship Canal.
3. S. STROUD, B.A.Sc., Toronto, Ont.
With Canadian Westinghouse Co.
1. C. C. SUTHERLAND, B.A.Sc., 446 Heiminck St., Edmonton, Alta.
City Engineer's Staff.
1. R. G. SWAN, B.A.Sc., Vancouver, B.C.
B. C. Hydrographic Survey.
1. A. D. SWORD, B.A.Sc., Toronto, Ont.
Shell Inspector.
- 1.*H. W. TATE, B.A.Sc.,
On Overseas Service.
- 3.*E. A. THOMPSON, Teeswater, Ont.
1. G. A. TIPPER, B.A.Sc., Brantford, Ont.
Contracting Surveyor.
3. A. G. TREES, B.A.Sc.,
On Overseas Service.
3. W. G. TURNBULL, B.A.Sc., Toronto, Ont.
Chief Engineer, Turnbull Elevator Co.
1. J. E. UNDERWOOD, Saskatoon, Sask.
McArthur, Murphy & Underwood.
1. C. P. VAN NORMAN, B.A.Sc.,
On Overseas Service.
1. J. VAN NOSTRAND, 91 Delaware Ave., Toronto, Ont.
1. A. VATCHER, B.A.Sc., Freshwater, Bay de Verde, Nfld.
With the Reid Newfoundland Co.
1. C. M. WALKER, B.A.Sc., Banff, Alta.
Dom. Land Surveyor.
1. C. E. WEBB, B.A.Sc., Vancouver, B.C.
B.C. Hydrographic Survey, Dom. Water Power Br.
1. E. E. WEBB, Box 358, Orillia, Ont.
Contractor.
3. F. C. WHITE, B.A.Sc., Walkerville, Ont.
With Canadian Bridge Co.
3. A. R. WHITEHEAD, B.A.Sc., 10720 103rd St., Edmonton, Alta.
1. R. G. WILKINSON, Aberarder, Ont.
- 5.*J. A. McK. WILLIAMS, B.A.Sc., Toronto, Ont.
A. E. Ames & Co.
- 1.*O. T. G. WILLIAMSON, B.A.Sc., 1345 North Shore Ave., Chicago, Ill.
3. L. R. WILSON, B.A.Sc.,
On Overseas Service.
3. F. F. WILSON, B.A.Sc., Toronto, Ont.
Surveyor.
2. S. A. WOOKEY, B.A.Sc., Schumacher, Ont.
Manager, Schumacher Mine.

1910.

2. J. H. ADAMS, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1910—Continued.

- 3.*O. F. ADAMS, B.A.Sc., Toronto, Ont.
 3. J. N. AGNEW,
 On Overseas Service.
 1.*W. G. AMSDEN, B.A.Sc.,
 On Overseas Service.
 1. J. A. BAIRD, B.A.Sc., Leamington, Ont.
 With A. Baird, O.L.S., C.E.
 1.*W. J. BAIRD, B.A.Sc.,
 On Overseas Service.
 1. H. A. BARNETT, B.A.Sc., Durand, Mich.
 With G.T. Ry.
 1.*E. W. BERRY, Seaforth, Ont.
 1. H. C. BINGHAM, D.L.S., Briercrest, Sask.
 Engineer and Surveyor.
 2. D. G. BISSET, B.A.Sc., Hosmer, B.C.
 C.P.R. Coal Mines.
 1.*R. H. H. BLACKWELL, B.A.Sc., Orangeville, Ont.
 With Wheelock & Christie.
 1.*E. P. BOWMAN, B.A.Sc., West Montrose, Ont.
 2. A. F. BROCK, B.A.Sc., Copper Cliff, Ont.
 Chief Mine Surveyor, Canadian Copper Co.
 3. M. O. BROWNE, 313 McClellan Ave., Detroit, Mich.
 3. J. R. BURGESS, B.A.Sc.,
 On Overseas Service.
 1. N. G. H. BURNHAM, B.A.Sc. (deceased).
 3.*W. C. CALE, B.A.Sc., Keokuk, Ia.
 Mississippi River Power Co.
 2.*A. D. CAMPBELL, B.A.Sc., M.E., Cobalt, Ont.
 Mining Engineer, O'Brien Mine.
 3. W. M. CARLYLE, B.A.Sc.,
 On Overseas Service.
 3. N. S. CAUDWELL,
 On Overseas Service.
 3. A. W. CHESNUT, B.A.Sc., (Died at Shorncliffe, England, while on Overseas Service).
 1. D. C. CHISHOLM, B.A.Sc., Winnipeg, Man.
 Resident Engineer, C.N.R.
 1. H. S. CLARK,
 On Overseas Service.
 1. J. A. CLAVEAU, Chicoutimi, Que.
 3. L. S. COCKBURN, B.A.Sc., Wyandotte, Mich.
 Engineering Dept., Pennsylvania Salt Mfg. Co.
 3. A. G. CODE, B.A.Sc.,
 Hydro-Electric Power Comm., Toronto, Ont.
 3. C. R. COLE, B.A.Sc., Toronto, Ont.
 1. G. A. COLQUHOUN, B.A.Sc., Vankleek Hill, Ont.
 4.*J. H. CRAIG, B.A.Sc.,
 On Overseas Service.
 3.*C. D. DEAN, B.A.Sc., 31 Hewitt Ave., Toronto, Ont.
 With Imperial Oil Co.
 5. A. V. DELAPORTE, B.A.Sc., Toronto, Ont.
 With Provincial Board of Health.
 3. R. L. DOBBIN, B.A.Sc., Peterboro', Ont.
 Waterworks Dept.
 3.*W. P. DOBSON, M.A.Sc., Toronto, Ont.
 With Hydro-Electric Power Com.

*Diploma with honours.

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1910—Continued.

- 3.*J. M. DUNCAN, B.A.Sc.,
On Overseas Service.
1. L. F. EADIE,
On Overseas Service.
2. V. H. EMERY, B.A.Sc.,
Mine Supt., Hollinger Mines Timmins, Ont.
3. W. J. EVANS, B.A.Sc.,
Toronto, Ont.
3. H. W. FAIRLIE,
Ry. Dept., The Northern Elec. & Mfg. Co. Winnipeg, Man.
- 3.*C. R. FERGUSON, B.A.Sc.,
Dominion Bridge Co. Toronto, Ont.
3. J. W. FERGUSON, B.A.Sc.,
Brampton, Ont.
- 4.*J. B. K. FISKEN, B.A.Sc.,
Toronto, Ont.
1. A. W. FLETCHER, B.A.Sc.,
On Overseas Service.
- 1.*J. A. FLETCHER,
Assistant to D. W. Robinson, D.L.S. Fisher River, Man.
3. F. T. FLETCHER, B.A.Sc.,
Dept. of Public Works. Calgary, Alta.
3. T. R. C. FLINT, B.A.Sc.,
12 Galley Ave., Toronto, Ont.
3. R. C. FOLLETT,
Lucan, Ont.
2. J. M. FOREMAN, B.A.Sc.,
Lucan, Ont.
1. W. J. FOSTER.
- 3.*W. C. FOULDS, B.A.Sc.,
Roadways Dept., City Hall. Toronto, Ont.
1. A. FRASER, B.A.Sc.,
Top. Surveys Branch, Dept. of Interior. Ottawa, Ont.
2. J. FREDIN,
c/o B.C. Copper Co. Princeton, B.C.
3. H. GALL, B.A.Sc.,
On Overseas Service.
1. M. M. GIBSON, B.A.Sc.,
Gibson & Gibson, O.L.S., C.E. Toronto, Ont.
1. J. M. GIBSON, B.A.Sc.,
On Overseas Service.
1. V. A. E. GOAD, B.A.Sc.,
Chas. E. Goad Co. Montreal, P.Q.
3. V. S. GOODEVE,
Phoenix, B.C.
1. H. GOODRIDGE,
Edmonton, Alta.
2. W. A. GORDON,
Wallaceburg, Ont.
3. V. F. GOURLAY, B.A.Sc.,
Manufacturer. Galt, Ont.
3. E. B. GRAHAM, B.A.Sc.,
Pittsburgh, Pa.
2. R. L. GREENE, B.A.Sc.,
Agent, Canadian Allis-Chalmers, Ltd. Ottawa, Ont.
5. J. H. HARRIS, B.A.Sc.,
W. Harris & Co. Danforth Ave., Toronto, Ont.
1. N. J. HARVIE, B.A.Sc. (Killed in action, France, 1916).
1. J. G. HELLIWELL (Killed in action, France, 1915).
1. J. F. HENDERSON,
On Overseas Service.
3. F. G. HICKLING, B.A.Sc.,
Westinghouse Electric & Manufacturing Co. East Pittsburgh, Pa.
1. O. H. HOOVER, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1910—Continued.

2. P. E. HOPKINS, B.A.Sc., Toronto, Ont.
With Ontario Bureau of Mines.
- 3.*W. J. IRWIN,
2. F. L. JAMES, B.A.Sc., Tillsonburg, Ont.
3. E. A. JAMIESON, Ottawa, Ont.
Permanent Staff, Militia Headquarters.
1. H. C. JOHNSTON, 509 Palmerston Ave., Toronto, Ont.
1. R. H. JOHNSTON, B.A.Sc., 10162 116th St., Edmonton, Alta.
1. J. C. KEITH, B.A.Sc., Moose Jaw, Sask.
City Engineer's Office.
- 2.*J. T. KING, B.A.Sc., Toronto, Ont.
Lecturer in Mining Engineering, University of Toronto.
3. G. A. KINGSTONE, B.A.Sc.,
On Overseas Service.
2. G. L. KIRWAN, B.A.Sc., Ottawa, Ont.
Topographical Surveys Br., Dept. of Interior.
5. P. T. KIRWAN, B.A.Sc., Ottawa, Ont.
Chemist, Inland Revenue Dept.
1. S. KNIGHT, B.A.Sc., Edmonton, Alta.
With Driscoll & Knight.
3. E. R. LAWLER, Toronto, Ont.
Hydro-Electric Power Comm., 190 University Ave.
- 3.*C. B. LEAVER, B.A.Sc., Sarnia, Ont.
3. R. G. LEE, B.A.Sc., Toronto, Ont.
Toronto-Hydro Electric System, 226 Yonge Street.
1. J. N. LEITCH (deceased).
1. J. C. LONGSTAFF, Toronto, Ont.
3. J. B. MACDONALD, B.A.Sc., Victoria, B.C.
With Cameron Lumber Co., Ltd.
2. A. D. MACDONALD, B.A.Sc.,
On Overseas Service.
1. J. A. MACDONALD, B.A.Sc., Ridgetown, Ont.
Private Practice.
1. G. A. MACDONALD, B.A.Sc., Vancouver, B.C.
Private Practice.
1. A. E. MACGREGOR, B.A.Sc.,
On Overseas Service.
1. E. G. MACKAY, B.A.Sc.,
On Overseas Service.
1. G. G. MACLENNAN, B.A.Sc.,
On Overseas Service.
1. D. D. MACLEOD, B.A.Sc. (Died of wounds received in action, France, 1916).
3. H. G. MACMURCHY, B.A.Sc., Messina, N.Y.
3.*H. J. MACTAVISH, B.A.Sc.,
On Overseas Service.
4. T. C. MCBRIDE, B.A.Sc., Calgary, Alta.
1. S. G. McDUGALL, B.A.Sc., 47 Vittoria Street, Ottawa, Ont.
- 1.*T. A. McELHANNEY, B.A.Sc., 706 Dominion Trust Bldg., Vancouver,
McElhanney Bros., Civil Engineers, D. & B.C. Land Surveyors. [B.C.]
- 1.*P. J. MCGARRY, D.L.S., O.L.S., Toronto, Ont.
3.*L. R. MCKIM, Brantford, Ont.
1.*J. McNIVEN, B.A.Sc., Moose Jaw, Sask.
Resident Engineer, Dept. of Trade and Commerce.

*Diploma with honours.

1910—Continued.

3. J. I. MCSLOY, B.A.Sc.,
On Overseas Service.
2. A. W. R. MAISONVILLE, B.A.Sc., Montreal, Que.
Dominion Bridge Co.
- 1.*N. MARR, B.A.Sc., Campbellford, Ont.
Res. Engr., Trent Canal.
- 1.*W. H. MARTIN, B.A.Sc., Toronto, Ont.
With Curry & Sparling, Architects.
2. A. C. MATTHEWS, B.A.Sc., 89 St. George St., Toronto, Ont.
1. C. H. MEADER, B.A.Sc., O.L.S., Toronto, Ont.
- 3.*H. O. MERRIMAN, B.A.Sc.,
On Overseas Service.
- 1.*D. J. MILLER,
On Overseas Service.
1. F. S. MILLIGAN, B.A.Sc.,
On Overseas Service.
3. P. E. MILLS, B.A.Sc., 320 W. 56th St., New York, N.Y.
3. J. P. MORGAN, Toronto, Ont.
With Orpen Construction Co.
1. F. R. MORTIMER, B.A.Sc., Ottawa, Ont.
Hydrographic Survey, Dept. of Naval Service.
1. A. H. MUNRO, B.A.Sc.,
On Overseas Service.
3. J. C. NASH, B.A.Sc.,
On Overseas Service.
- 1.*V. A. NEWHALL, B.A.Sc., Edmonton, Alta.
Dept. of Interior.
- 2.*W. E. NEWTON, B.A.Sc., Sandon, B.C.
Slocan Star Mines.
1. F. T. NICHOL, B.A.Sc.,
On Overseas Service.
1. C. M. O'NEIL, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
3. C. E. PALMER, B.A.Sc., E.E., Toronto, Ont.
Bell Telephone Co.
3. G. C. PARKER, M.A.Sc., Toronto, Ont.
Roadways Branch, Dept. of Public Works.
3. K. K. PEARCE, B.A.Sc., Lachine, Que.
Dominion Bridge Co.
1. A. W. PEARSON, Weston, Ont.
3. C. H. PHILLIPS, B.A.Sc., 85 Manchester Place, Buffalo, N.Y.
1. D. E. PYE, Cranbrook, B.C.
1. W. S. RAMSAY, B.A.Sc., 86 Robert St., Toronto, Ont.
3. B. J. REDFERN (deceased).
3. C. E. RICHARDSON, B.A.Sc.,
On Overseas Service.
1. H. C. RITCHIE, Calgary, Alta.
Dept. of Public Works.
1. O. W. ROSS, B.A.Sc.,
On Overseas Service.
1. W. F. B. RUBIDGE, Matheson, Ont.
Abitibi Power and Paper Co., Ltd.
3. W. C. SHAW, B.A.Sc., Toronto, Ont.
Hamilton Gear and Machine Co.

*Diploma with honours.

1910—Continued.

3. N. C. SHERMAN, Ottawa, Ont.
Inspector, Ordnance Machinery and Artillery Stores, Militia Headquarters.
- 1.*W. C. SMITH, B.A.Sc., Victoria, B.C.
Engineer, Water Rights Branch, Dept. of Lands.
2. F. L. SMITH,
On Overseas Service.
5. G. E. SMITH, B.A.Sc., Bozeman, Mont.
Agricultural College.
2. R. J. SPRY, B.A.Sc., Eustis Mine, Que.
2. A. L. STEELE, B.A.Sc.,
On Overseas Service.
- 2.*H. M. STEVEN, B.A.Sc.,
On Overseas Service.
- 1.*L. I. STONE, London, Ont.
Resident Engineer, G.T. Ry.
3. A. L. SUTHERLAND, B.A.Sc., Toronto, Ont.
With Canadian General Electric Co.
3. E. A. TERNAN, B.A.Sc.,
On Overseas Service.
- 5.*W. H. THOM, Toronto, Ont.
Factory Manager, Lyman Bros. & Co.
3. H. B. THOMPSON, B.A.Sc., Sarnia, Ont.
Engineering Dept., Imperial Oil Co.
3. R. M. A. THOMPSON, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Com.
- 2.*C. G. TITUS, Cobalt, Ont.
Engineer, Timiskaming Mine.
3. K. M. VAN ALLEN, B.A.Sc., (died of wounds in German prison camp, 1916).
1. L. T. VENNEY, B.A.Sc., 35 Charles Street, Brockville, Ont.
1. N. WAGNER, 19 Gerrard St. E., Toronto, Ont.
Bridge Dept., Canada Foundry Co.
1. R. M. WALKER, B.A.Sc., Box 86, Hawkesbury, Ont.
2. T. WALTON, B.A.Sc. (deceased).
1. G. A. WARRINGTON, B.A.Sc., Winnipeg, Man.
M.L.S., Parliament Bldgs.
3. M. B. WATSON, B.A.Sc.,
On Overseas Service.
- 3.*H. M. WHITE, Lachine Locks, Que.
With Dominion Bridge Co.
1. J. L. WHITSIDE, B.A.Sc., (died of wounds received in action, 1916).
4. W. S. WICKENS, B.A.Sc., Toronto, Ont.
With Canadian Fire Underwriters Association.
- 3.*G. K. WILLIAMS, B.A.Sc., (killed in collision at Luxeuil, while on active service, 1916).
- 1.*W. H. WILSON, B.A.Sc., Toronto, Ont.
Estimator, McGregor & McIntyre, Ltd.
3. G. E. WOODLEY (deceased).
1. G. R. WORKMAN, Toronto, Ont.
Canadian Inspection Co.
- L. A. WRIGHT, B.A.Sc., 278 Jarvis St., Toronto, Ont.
Asst. Engineer, C.P.R.

*Diploma with honours.

1910—Continued.

- 3.*A. W. YOEELL, B.A.Sc.,
On Overseas Service.
 1. W. S. YOUNG, B.A.Sc., Guelph, Ont.

1911.

- 5.*J. AITKEN, B.A.Sc.,
Chemist, Malleable Iron Works. Brantford, Ont.
 1. L. B. ALLAN, B.A.Sc.,
On Overseas Service.
 3. E. G. ARCHER, B.A.Sc.,
On Overseas Service.
 1. L. A. BADGLEY, B.A.Sc., Peterborough, Ont.
Inspector, General Electric Co.
 1. T. H. BARTLEY, B.A.Sc., O.L.S., Toronto, Ont.
 2.*H. L. BATTEN, Rossland, B.C.
Cons. Mining and Smelting Co.
 1. G. L. BERKELEY,
On Overseas Service.
 3.*J. H. BILLINGS, B.A.Sc., S.M., Weston, Ont.
Lecturer in Machine Designing, University of Toronto.
 2.*J. R. BISSETT, B.A.Sc., Ottawa, Ont.
Water Power Branch, Dept. of Interior.
 3. W. O. BOSWELL, Toronto, Ont.
 1. F. BOWMAN, Lachine, Que.
Dominion Bridge Co.
 3. T. W. BRACKINREID, B.A.Sc., Winnipeg, Man.
Canadian General Electric Co.
 2. W. M. BROCK, B.A.Sc.,
On Overseas Service.
 1. W. H. D. BROUSE, B.A.Sc., Toronto, Ont.
With Kerry & Chace.
 3. H. BROWN, B.A.Sc., Calgary, Alta.
Dept. of the Interior.
 3.*E. T. CAIN, B.A.Sc., Moncton, N.B.
Canadian Government Railways.
 1. C. S. CAMERON, Regina, Sask.
 1. C. D. CAMPBELL, Galt, Ont.
Town Engineer.
 6.*W. W. CHADWICK, B.A.Sc., Hamilton, Ont.
Asst. Manager, Canadian Chadwick Metal Co.
 1. R. B. CHANDLER, B.A.Sc., Calgary, Alta.
With Janse Bros., Boomer, Hughes and Crain.
 1. P. G. CHERRY, B.A.Sc., Toronto, Ont.
Advertising Sales Manager, Might Directories, Ltd.
 3. E. F. CHESNUT, B.A.Sc.,
On Overseas Service.
 1. H. J. CLARK, B.A.Sc., 50 Hilda St., Hamilton, Ont.
 1. F. W. CLARK, 669 Spadina Ave., Toronto, Ont.
With Hydro-Electric Power Commission.
 3. F. S. CLEARY (deceased).
 2.*D. B. COLE, B.A.Sc., Cleveland, Ohio
Cleveland Cadillac Co.
 3.*A. S. COOK, B.A.Sc., Cleveland, Ohio.
Superintendent, Construction Dept., Geo. R. Cook Co.

*Diploma with honours.

1911—Continued.

1. C. W. CORNELL, New Westminster, B.C.
Jones, Cornell Const. Co. Ltd.
1. M. E. CROUCH, 14 Algoma St., Port Arthur, Ont.
3. W. M. CRUTHERS, B.A.Sc., Peterboro', Ont.
Can. Gen. Electric Co.
1. O. F. CUMMINS, Regina, Sask.
Provincial Drainage Engineer
3. T. J. CUNERTY, 165 Broadway, New York, N.Y.
With Westinghouse Electric & Mfg. Co.
1. C. H. CUNNINGHAM, B.A.Sc., Toronto, Ont.
Engineer, Frank Barber & Co.
1. J. H. CURZON,
On Overseas Service.
- 3.*F. K. D'ALTON, B.A.Sc., Ridley College, St. Catharines, Ont.
Instructor in Physics.
1. W. B. DAVIS, B.A.Sc., Frankford, Ont.
Trent Valley Canal.
3. F. C. DEGUERRE, B.A.Sc., Vancouver, B.C.
B.C. Electric Co.
5. L. W. DONCASTER, Toronto, Ont.
With Lever Bros.
- 3.*F. H. DOWNING,
On Overseas Service.
1. W. B. DUNBAR, B.A.Sc., Dunbarton, Ont.
5. C. H. ECKERT, B.A.Sc., 434 Queen's Ave., London, Ont.
3. J. A. ELLIOT, B.A.Sc., Niagara Falls, N.Y.
Castner Electrolytic Alkali Co.
1. G. R. ELLIOTT, B.A.Sc.,
On Overseas Service.
1. C. F. ELLIOTT, B.A.Sc.,
On Overseas Service.
1. K. A. FARRELL, B.A.Sc., Toronto, Ont.
3. T. J. FARRELLY,
On Overseas Service.
1. S. E. FLOOK, B.A.Sc., Port Arthur, Ont.
O. L. Surveyor and Civil Engineer.
3. C. C. FLYNN, London, Ont.
5. E. L. FRANKEL, B.A.Sc., Toronto, Ont.
Frankel Bros.
2. E. E. FREELAND, B.A.Sc., Ottawa, Ont.
Hydrographic Surveys Branch.
1. J. R. FREEMAN, B.A.Sc., Moncton, N.B.
Canadian Government Railways.
- 4.*H. P. FRID, B.A.Sc.,
On Overseas Service.
3. R. J. FULLER, B.A.Sc., Toronto, Ont.
Chief Engineer, John V. Gray Const. Co., Ltd.
- 5.*J. L. GOODERHAM, B.A.Sc., Toronto, Ont.
General Distilling Co.
3. R. E. GREEN, B.A.Sc., Toronto, Ont.
3. E. A. GREENE, B.A.Sc.,
On Overseas Service.
3. H. G. HALL, Woodstock, Ont.
With Hydro-Electric Power Commission.
1. G. M. HAMILTON, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1911—Continued.

7. M. B. HASTINGS,
On Overseas Service.
2. M. B. HEEBNER, B.A.Sc.,
With The Foundation Co. Coquitlam, B.C.
2. F. I. HELSON,
With C.N. Ry. Newburgh, Ont.
3. H. R. HILL, B.A.Sc.,
Hydro-Electric System. Toronto, Ont.
1. A. J. HUFF, B.A.Sc.,
On Overseas Service.
1. K. HUFFMAN,
Toronto, Ont.
- 1.*H. HYATT, B.A.Sc.,
Toronto, Ont.
- 1.*R. H. JARVIS, B.A.Sc.,
On Overseas Service.
- 1.*L. E. JONES,
On Overseas Service.
- 1.*E. A. KELLY,
Construction Dept., C.P.R. Winnipeg, Man.
- 3.*M. KIRKWOOD, B.A.Sc.,
Am. Telephone and Telegraph Co. New York, N.Y.
- 2.*J. LANNING, B.A.Sc.,
1. N. LAWLESS, (died of pneumonia, France, 1915).
2. M. I. LIEBERMAN, B.A.Sc., 700 Queen Street W, Toronto, Ont.
3. G. L. LILLIE, B.A.Sc.,
With Toronto Hydro-Electric System. Toronto, Ont.
6. A. L. LONG, B.A.Sc.,
Chemist, Park, Blackwell & Co. Toronto, Ont.
- 1.*A. W. P. LOWRIE, B.A.Sc.,
On Overseas Service.
3. W. M. MACANDREW, B.A.Sc.,
Allis-Chalmers-Bullock Co. Vancouver, B.C.
- 3.*R. V. MACAULAY, B.A.Sc.,
On Overseas Service.
- 2.*J. T. MACBAIN,
Union Carbide Co. Niagara Falls, N.Y.
- 1.*R. E. A. MACBETH, B.A.Sc.,
On Overseas Service.
1. F. M. MACDONALD, B.A.Sc.,
Contractor. Toronto, Ont.
- 3.*W. S. MACKENZIE,
With Canadian Linderman Co., Ltd. Woodstock, Ont.
- 1.*J. G. MACLAURIN, B.A.Sc., Box 621, Sault Ste. Marie, Ont.
1. J. B. MCANDREW, B.A.Sc.,
On Overseas Service.
- 3.*J. A. MCEACHREN,
Strathburn, Ont.
3. R. W. MCELROY, B.A.Sc.,
Toronto, Ont.
3. H. J. MCEWEN, B.A.Sc.,
Brantford, Ont.
- 3.*W. G. MCGHIE, B.A.Sc.,
On Overseas Service.
3. D. A. MCKENZIE, B.A.Sc.,
With Hydro-Electric Power Com. Toronto, Ont.
2. A. J. MCLAREN, B.A.Sc.,
On Overseas Service.
3. A. G. MCLEISH
Toronto, Ont.

*Diploma with honours.

1911—Continued.

- 1.*R. A. McLELLAN, B.A.Sc., Saskatoon, Sask.
With Murphy & Underwood.
2. W. B. McPHERSON, B.A.Sc., Toronto, Ont.
Capt., Headquarters Staff, 1st Bde.
3. A. A. McQUEEN, B.A.Sc.,
On Overseas Service.
- 4.*H. H. MADILL, B.A.Sc., Toronto, Ont.
Major, Instructional Staff, M.D. No. 2.
3. J. C. MARTIN, B.A.Sc., Montreal, Que.
Northern Electric Co.
3. C. A. MEADOWS, B.A.Sc., 6 Sussex Ave., Toronto, Ont.
1. L. G. MILLS, B.A.Sc.,
On Overseas Service.
5. L. C. MITCHELL, Bay City, Mich.
2. J. A. MORPHY, B.A.Sc.,
On Overseas Service.
1. M. H. MURPHY, B.A.Sc., Toronto, Ont.
Contractor.
1. J. C. MURTON,
On Overseas Service.
3. E. H. NIEBEL, B.A.Sc., Regina, Sask.
Northern Electrical Co.
3. C. K. NIXON, B.A.Sc., Detroit, Mich.
3. E. S. NOBLE, B.A.Sc., Toronto, Ont.
1. R. K. NORTHEY, B.A.Sc.,
On Overseas Service.
2. W. A. O'FLYNN, B.A.Sc., Coniston, Ont.
Mond Nickel Co.
1. W. V. OKE, B.A.Sc.,
On Overseas Service.
2. J. A. ORR, B.A.Sc., Toronto, Ont.
3. J. S. PARKER, B.A.Sc., Burk's Falls, Ont.
With The Knight Bros. Co., Ltd.
- 3.*J. H. PARKIN, B.A.Sc., Toronto, Ont.
Lecturer in Mechanical Engineering, University of Toronto.
- 1.*J. McD. PATTON, B.A.Sc., Toronto, Ont.
3. C. L. PEARSON, Kananaskis, Alta.
With Calgary Power Co.
2. S. J. PEPLER,
(Killed in Action, France, 1917).
- 3.*W. J. PERRIN, B.A.Sc., Toronto, Ont.
1. B. W. PICK, B.A.Sc., Regina, Sask.
With Smith & Phillips.
- 3.*E. H. PORTE, Toronto, Ont.
With Hydro-Electric Power Commission.
- 1.*F. M. PRATT, B.A.Sc.,
On Overseas Service.
4. H. PULLAN, Toronto, Ont.
With E. Pullan.
1. L. J. QUINLAN, B.A.Sc., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
1. L. W. RAILTON,
On Overseas Service.

*Diploma with honours.

1911—Continued.

- 1.*J. E. RATZ, B.A.Sc., Ottawa, Ont.
Dominion Observatory.
1. F. N. READ, B.A.Sc.,
On Overseas Service.
4. E. V. REID,
On Overseas Service.
- 1.*W. A. RICHARDSON, B.A.Sc.,
On Overseas Service.
- 1.*W. E. ROBINSON, B.A.Sc., R.R. No. 2, Oshawa, Ont.
1. H. L. ROBLIN, B.A.Sc., Galt, Ont.
Canadian Inspection Co.
3. L. W. ROTHERY, B.A.Sc., East Pittsburg, Pa.
Westinghouse Machine Co.
- 4.*T. L. F. ROWE, Whitby, Ont.
Structural Engineer, Hospital for Insane.
3. A. S. RUNCIMAN, 30 Daly Ave., Stratford, Ont.
3. F. G. RUTLEY, B.A.Sc.
On Overseas Service.
1. E. M. SALTER, 901 Boyd Bldg., Winnipeg, Man.
1. F. R. SCANDRETT, B.A.Sc., Belgrave, Ont.
- 5.*J. W. SCOTT, B.A.Sc.,
Resident Engineer, Hudson Bay Ry.
3. N. D. SEATON, B.A.Sc., 360 Stewart St., Peterboro, Ont.
With General Electric Co.
1. N. SHARPE, 901 Boyd Bldg., Winnipeg, Man.
Greater Winnipeg Water District.
- 4.*P. SHEARD, B.A.Sc.,
On Overseas Service.
- 1.*W. A. SIBBETT,
On Overseas Service.
- 2.*C. P. SILLS, B.A.Sc.,
On Overseas Service.
- 1.*K. H. SMITH, Ottawa, Ont.
Water Power Branch, Dept. of the Interior.
3. M. L. SMITH, B.A.Sc., Toronto, Ont.
Director of Engineering, Technical High School.
1. R. G. SNEATH,
On Overseas Service.
- 3.*G. E. SQUIRE, B.A.Sc., Toronto, Ont.
3. W. S. STEELE, B.A.Sc., Brooklyn, N.Y.
Brooklyn Rapid Transit Co.
- 5.*A. E. STEWART, B.A.Sc.,
On Overseas Service.
- 3.*R. O. STEWART, B.A.Sc., Moncton, N.B.
Bridge Dept., Intercolonial Ry.
- 3.*R. A. STORY, B.A.Sc., Vancouver, B.C.
B.C. Telephone Co.
1. C. F. SZAMMERS,
On Overseas Service.
3. R. TAYLOR, B.A.Sc., Toronto, Ont.
On Staff, Upper Canada College.
1. J. B. TEMPLE, B.A.Sc., 438 Gladstone Ave., Toronto, Ont.
3. G. C. THOMAS,
On Overseas Service.

*Diploma with honours.

1911—Continued.

1. R. D. TORRANCE, B.A.Sc.,
On Overseas Service.
1. W. G. TOUGH, B.A.Sc.,
On Overseas Service.
- 1.*N. VICKERS,
Died of Wounds received in action April '17.
2. J. H. C. WAITE, B.A.Sc.,
Port Hope, Ont.
1. W. D. WALCOTT, B.A.Sc.,
On Overseas Service.
3. G. L. WALLACE, B.A.Sc.,
Demonstrator in Physics, University of Toronto.
Toronto, Ont.
1. A. WARDELL, B.A.Sc.,
Toronto, Ont.
1. F. E. WATSON, B.A.Sc.,
Demonstrator in Drawing, University of Toronto.
Toronto, Ont.
- 3.*P. G. WELFORD, B.A.Sc.,
On Overseas Service.
2. A. G. WHEELER, B.A.Sc.,
Jackson's Point, Ont.
3. G. H. WILKES, B.A.Sc.,
On Overseas Service.
- 5.*E. R. WILLIAMS,
Chemist, Electrometals Co.
Shawinigan Falls, Que.
- 3.*H. A. WILSON,
Supt., J. C. Wilson & Co., Mechanical Engineers.
Glenora, Ont.
3. C. S. WOOD,
Electrical Engineer.
Courtenay, B.C.
1. W. G. WORDEN, B.A.Sc.,
Town Engineer.
Oshawa, Ont.
- 1.*W. J. T. WRIGHT, B.A.Sc.,
On Overseas Service.
1. F. H. WRONG, D.L.S.,
Sandwich, Ont.
2. W. H. WYLIE, B.A.Sc.,
On Overseas Service.
3. H. K. WYMAN,
On Overseas Service.
3. L. P. YORKE,
Wiring Inspector, City of Edmonton.
Edmonton, Alta.
1. S. YOUNG, B.A.Sc., D. & S.L.S.,
Public Works Dept.
Regina, Sask.
- 3.*A. YOUNG, B.A.Sc.,
Instructor, Technical High School.
Toronto, Ont.
1. W. E. ZINKAN,
Dominion Land Surveyor.
865 24th St., Edmonton, Alta.

Owing to change of course from three to four years, there were no graduates in 1912.

1913.

- 7.*R. J. ALLEN, B.A.Sc.,
Inspector, Imperial Munitions Board.
Toronto, Ont.
- 3.*A. S. ANDERSON, B.A.Sc., (killed in action, France, 1916).
- 1.*C. R. AVERY, M.A.Sc.,
On Overseas Service.

*Degree with honours.

1913—Continued.

- 4.*L. C. M. BALDWIN, B.A.Sc.,
On Overseas Service.
1. F. W. BEATTY, B.A.Sc.,
On Overseas Service.
- 1.*W. B. BEATTY, B.A.Sc., O.L.S.,
Beatty & Wilkins. Haliburton, Ont.
2. C. A. BELL,
On Overseas Service.
- 1.*B. S. BLACK, B.A.Sc., 197 Madison Ave., Toronto, Ont.
1. D. BLAIN, B.A.Sc.,
On Overseas Service.
7. E. R. BONTER, B.A.Sc., Montreal, Que.
Canadian Crocker-Wheeler Co.
- 7.*L. R. BRERETON, B.A.Sc.,
On Overseas Service.
2. T. R. BUCHANAN, B.A.Sc., Sudbury, Ont.
Creighton Mine.
- 7.*W. B. BUCHANAN, B.A.Sc. Toronto, Ont.
With Hydro-Electric Power Commission.
3. B. H. A. BURROWS, B.A.Sc., (killed in action, France, 1916).
2. W. B. CALDWELL, B.A.Sc.,
On Overseas Service.
1. O. L. CAMERON, B.A.Sc.
On Overseas Service.
1. L. L. CAMPBELL, B.A.Sc., Orangeville, Ont.
- 3.*R. M. CARMICHAEL, B.A.Sc., Kenora, Ont.
1. G. M. CARRIE, B.A.Sc., Neepawa, Man.
With Chipman & Power.
2. H. A. CLARK, B.A.Sc., Toronto, Ont.
- 6.*G. E. CLARKSON, B.A.Sc., London, England.
Imperial Munitions Board.
- 3.*B. D. CLEGG, B.A.Sc., Peterboro, Ont.
7. J. H. COLEMAN, B.A.Sc., 17 Farnham Ave., Toronto, Ont.
- 1.*G. M. COOK, B.A.Sc., Youngstown, Ohio.
Trussed Concrete Steel Co
1. J. A. COOMBS, B.A.Sc., 393 Ossington Ave., Toronto, Ont.
- 4.*B. R. COON, B.A.Sc., Temple Bldg., Toronto, Ont.
Architect.
2. W. T. CURTIS, B.A.Sc.,
On Overseas Service.
1. A. J. DATES, B.A.Sc., Detroit, Mich.
Draftsman, With Snead & Fissman.
3. H. D. DAVISON, B.A.Sc., Port Weller, Ont.
Section 1, Welland Ship Canal.
7. E. L. DEITCH, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Com.
- 2.*R. W. DIAMOND, B.A.Sc., Anaconda, Mont.
Anaconda Mining Co.
7. W. G. DUNCAN, B.A.Sc., Port Dover, Ont.
1. F. R. FIDDES, B.A.Sc., Detroit, Mich.
1. D. H. FLEMING, B.A.Sc., Toronto, Ont.
Sewers Dept. City Hall.
3. F. F. FOOTE, B.A.Sc., Port Dalhousie, Ont.
- 1.*J. S. GALBRAITH, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1913—Continued.

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| 2. W. H. GARNHAM, B.A.Sc., | Cayuga, Ont. |
| 1. A. M. GERMAN, B.A.Sc., | Welland, Ont. |
| 1. H. M. GOODMAN, B.A.Sc.,
<i>Sewers Dept., City Hall.</i> | Toronto, Ont. |
| 1. A. G. GRAY, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1.*E. R. GRAY, B.A.Sc.,
<i>City Engineer.</i> | Hamilton, Ont. |
| 3. A. J. GRAY, B.A.Sc.-
<i>On Overseas Service.</i> | |
| 7. J. P. HADCOCK, B.A.Sc.,
<i>Can. Gen. Elec. Co.</i> | Peterboro, Ont. |
| 7. H. C. HARRIS, | Brantford, Ont. |
| 1. H. A. HAWLEY, B.A.Sc.,
<i>Lewis Construction Co.</i> | Toronto, Ont. |
| 1.*R. L. HEARN, B.A.Sc.,
<i>Hydro-Electric Power Com.</i> | Toronto, Ont. |
| 1.*H. J. HEINONEN, B.A.Sc.,
<i>Columbia University.</i> | New York, N.Y. |
| 3.*R. A. HENRY, B.A.Sc.,
<i>Draftsman, Dominion Bridge Co.</i> | Box 144, Lachine Locks, Que. |
| 7.*T. A. HILL, B.A.Sc., | Ninga, Man. |
| 1.*O. HOLDEN, B.A.Sc.,
<i>Hydro-Electric Power Commission.</i> | Toronto, Ont. |
| 1. J. T. HOWARD, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 7.*T. F. HOWLETT, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. E. T. IRESON, B.A.Sc., | 144 Walmer Rd., Toronto, Ont. |
| 1. G. R. JOHNSON, B.A.Sc., | Fernie, B.C. |
| 1. R. L. JUNKIN, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 7.*S. S. KELLY, | Lambeth, Ont. |
| 7. A. E. KERR, B.A.Sc.,
<i>Can. Westinghouse Co.</i> | Hamilton, Ont. |
| 7. C. E. KILMER, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. J. S. LAING, B.A.Sc.,
<i>Town Engineer.</i> | Barrie, Ont. |
| 7. A. LESLIE, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 4.*H. D. LIVINGSTON, B.A.Sc.,
<i>With Angus & Angus.</i> | North Bay, Ont. |
| 1.*K. F. MICKLEBOROUGH, B.A.Sc.,
<i>Dept. of Railways and Canals.</i> | Cornwall, Ont. |
| 7.*G. J. MICKLER, B.A.Sc.,
<i>Hydro-Electric Commission.</i> | Toronto, Ont. |
| 1. N. C. MILLMAN, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. F. J. MULQUEEN, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1.*W. C. MURDIE, M.A.Sc.,
<i>On Overseas Service.</i> | |
| 2. D. A. S. MUTCH, B.A.Sc.,
<i>Hollinger Mines.</i> | Timmins, Ont. |

*Degree with honours.

1913—Continued.

- 1.*H. R. MACKENZIE, B.A.Sc., Regina, Sask.
Inspecting Engineer, Board of Highway Commissioners.
1. A. R. MACPHERSON, B.A.Sc., Petrolia, Ont.
- 6.*K. S. MACLACHLAN, B.A.Sc., Ottawa, Ont.
Explosives Dept., Imperial Munitions Board.
1. W. H. MACTAVISH, B.A.Sc.
On Overseas Service.
1. T. V. MCCARTHY, B.A.Sc.,
On Overseas Service.
- 4.*R. S. MCCONNELL, B.A.Sc., 12 Rosemount Ave., Toronto, Ont.
Architect.
1. W. L. McFAUL, B.A.Sc., Box 672, Sault Ste. Marie, Ont.
- 2.*K. L. NEWTON, B.A.Sc., Copper Cliff, Ont.
Canadian Copper Co.
- 5.*C. J. OTTO, B.A.Sc., Toronto, Ont.
Gutta Percha and Rubber Mfg. Co.,
- 1.*N. F. PARKINSON, M.A.Sc.,
On Overseas Service.
- 7.*J. W. PEART, B.A.Sc., 61 Pearl Street, St. Thomas, Ont.
- 1.*E. PERRON, B.A.Sc., Metabetchouan, Que.
1. H. C. QUAIL, B.A.Sc., Toronto, Ont.
- 7.*E. G. RATZ, Hamilton, Ont.
With Canadian Westinghouse Co.
- 1.*J. M. RIDDELL, B.A.Sc.
On Overseas Service.
- 1.*J. E. RITCHIE, B.A.Sc.,
On Overseas Service.
- 1.*C. S. ROBERTSON, M.A.Sc., Toronto, Ont.
With John ver Mehr Eng. Co., Ltd.
- 7.*C. C. ROUS, B.A.Sc., Royal Bank Bldg., Toronto, Ont.
Capt., Imperial Munitions Board, Head Inspector for Fuses.
7. C. H. RUSSELL, B.A.Sc., Hamilton, Ont.
Can. Westinghouse Co.
- 7.*A. A. SCARLETT, B.A.Sc., Mount Charles, Ont.
- 1.*L. SEWELL, B.A.Sc., Cedar Grove, Ont.
- 7.*M. C. SHARP, B.A.Sc.,
On Overseas Service.
- 3.*K. E. SHAW, B.A.Sc., Wallaceburg, Ont.
Dominion Sugar Co.
- 3.*F. R. SIMS, B.A.Sc., Ottawa, Ont.
Dept. of Customs.
- 2.*D. G. SINCLAIR, B.A.Sc., 145 Queen St., Sarnia, Ont.
- 4.*R. W. SOPER, B.A.Sc.,
On Overseas Service.
1. W. A. SPELLMAN, B.A.Sc., Toronto, Ont.
City Engineer's Dept.
- 7.*J. M. STRATHY, B.A.Sc., (killed in action, 1916).
1. D. SUTHERLAND, B.A.Sc.,
On Overseas Service.
1. R. TASKER, B.A.Sc., 57 Duke Street, Toronto, Ont.
- 1.*J. M. THOMPSON, B.A.Sc., Mount Healy, Ont.
- 2.*W. K. THOMPSON, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept of Interior.
- 7.*D. J. THOMSON, B.A.Sc., Toronto, Ont.
Demonstrator in Mechanical Engineering, University of Toronto.

*Degree with honours.

1913—Continued.

7. T. E. TORRANCE, B.A.Sc.,
On Overseas Service.
2. R. M. TROW, B.A.Sc. 76 Queen St., Stratford, Ont.
- 1.* W. G. URE, B.A.Sc.,
- 1.* C. F. VON GUNTEN, B.A.Sc., Blenheim, Ont.
3. R. E. WATTS, B.A.Sc., (died of scarlet fever while on active service,
1916).
- 3.* C. A. WEBSTER, B.A.Sc., Galt, Ont.
Sheldons, Limited.
- 4.* H. WEBSTER, B.A.Sc.,
On Overseas Service.
1. D. H. WEIR, B.A.Sc.
On Overseas Service.
1. W. S. WINTERS, B.A.Sc., 55 Bleecker St., Toronto, Ont.
1. R. F. B. WOOD, B.A.Sc.,
On Overseas Service.
- 7.* A. J. WRIGHT, B.A.Sc.,
On Overseas Service.
7. R. B. YOUNG, B.A.Sc., Toronto, Ont.
With H.E.P.C.

1914

1. E. M. ABENDANA, B.A.Sc.,
On Overseas Service.
- 1.* F. C. ADSETT, B.A.Sc., Guelph, Ont.
- 1.* J. L. ALTON, B.A.Sc., Toronto, Ont.
Dept. of Public Works for Ontario.
- 2.* F. C. ANDREWS, B.A.Sc. (killed in action, France, 1915).
7. C. E. ARMER, B.A.Sc., 38 Palmerston Gardens, Toronto, Ont.
With Ewart & Jacob, Elec. Engrs.
- 2.* H. R. BANKS, B.A.Sc.
On Overseas Service.
1. E. L. BEDARD, B.A.Sc., Port Lambton, Ont.
- 1.* H. J. BEDARD, B.A.Sc., Port Lambton, Ont.
1. J. T. BELCHER, B.A.Sc., Guelph, Ont.
With H.E.P.C.
1. S. G. BENNETT, B.A.Sc.,
On Overseas Service.
1. P. V. BINNS, B.A.Sc.,
On Overseas Service.
- 1.* J. M. BLYTH, B.A.Sc., R.R. No. 3, Durham, Ont.
5. A. R. BONHAM, B.A.Sc., 47 Harbord Street, Toronto, Ont.
Laboratory, Provincial Board of Health.
- 1.* J. H. W. BOWER, B.A.Sc., 15 Pleasant Blvd., Toronto, Ont.
- 3.* H. H. BROWN, B.A.Sc., Ottawa, Ont.
Steel Dept., Imperial Munitions Board.
- 7.* W. D. BROWN, B.A.Sc., Owen Sound, Ont.
- 1.* D. H. CAMPBELL, B.A.Sc., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
- 3.* H. M. CAMPBELL, B.A.Sc.,
On Overseas Service.
- 1.* J. J. CAMPBELL, B.A.Sc.,
On Overseas Service.
- 6.* C. N. CANDEE, B.A.Sc., Toronto, Ont.
Synthetic Drug Co.

*Degree with honours.

1914—Continued.

2. R. T. CARLYLE, B.A.Sc., Toronto, Ont.
 2. J. M. CARTER, B.A.Sc.,
On Overseas Service.
 2. E. V. CHAMBERS, B.A.Sc.
On Overseas Service.
 1.*R. M. CHRISTIE, B.A.Sc., 9847 91st Ave., Edmonton South, Alta.
 3. K. M. CLIPSHAM, B.A.Sc., Toronto, Ont.
Clipsham & Delamere.
 3.*E. D. W. COURTICE, B.A.Sc., 107 Bay St. S., Hamilton, Ont.
 1. J. W. CRASHLEY, B.A.Sc.
On Overseas Service.
 7.*A. W. CRAWFORD, B.A.Sc.,
On Overseas Service.
 1.*W. CUTHBERTSON, B.A.Sc.
On Overseas Service.
 1. G. F. DALTON, B.A.Sc.,
On Overseas Service.
 1.*R. DASHWOOD, B.A.Sc.
On Overseas Service.
 1.*R. D. DAVIDSON, B.A.Sc., Le Pas, Man.
With A. H. Hawkins, D.L.S.
 3. R. D. DELAMERE, B.A.Sc.,
On Overseas Service.
 1.*F. W. DOUGLAS, B.A.Sc., 276 Palmerston Ave., Toronto, Ont.
 7. H. C. EDWARDS, B.A.Sc., 192 Jarvis Street, Toronto, Ont.
 7.*H. F. ELLIOTT, B.A.Sc., Norwood, Ont.
 1. J. A. ELLIOTT, B.A.Sc., Box 215, Nelson, B.C.
 2.*S. D. ELLIS, B.A.Sc., (Died after operation, while on overseas service,
 1916).
 1.*H. E. EYRES, B.A.Sc., Peterborough, Ont.
 1.*O. M. FALLS, B.A.Sc., London, Ont.
Empire Mfg. Co.
 7. D. G. FERGUSON, B.A.Sc.,
On Overseas Service.
 1. G. O. FLEMING, B.A.Sc.,
On Overseas Service.
 2. J. S. FLEMING, B.A.Sc., (killed in action, France, 1916).
 1.*J. L. FOREMAN, B.A.Sc., Collingwood, Ont.
 7.*H. J. FRANKLIN, B.A.Sc., 12 Chestnut St., St. Catharines, Ont.
 5.*J. G. G. FROST, B.A.Sc., Welland, Ont.
Asst. Chemist, Metals-Chemical Co.
 1. C. H. R. FULLER, B.A.Sc.,
On Overseas Service.
 7.*E. I. GILL, B.A.Sc.
On Overseas Service.
 2.*J. R. GILL, B.A.Sc., Sudbury, Ont.
 1. R. W. GOUINLOCK, B.A.Sc.
On Overseas Service.
 7. C. I. GRIERSON, B.A.Sc., Hamilton, Ont.
With Imperial Oil Company.
 3.*W. H. HALL, B.A.Sc., 813 Water St., Peterborough, Ont.
 3.*G. H. HALLY, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1914—Continued.

- 1.*J. J. HANNA, B.A.Sc.,
On Overseas Service.
1. J. H. HAWES, B.A.Sc.
On Overseas Service.
- 1.*L. T. HAYMAN, B.A.Sc.
On Overseas Service.
- 1.*B. B. HOGARTH, B.A.Sc.,
On Overseas Service.
4. E. E. H. HUGLI, B.A.Sc., Golden Lake, Ont.
- 1.*S. A. HUSTWITT, B.A.Sc.,
On Overseas Service.
- 7.*A. S. JANNATI, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
- 1.*R. P. JOHNSON, B.A.Sc., St. Catharines, Ont.
Welland Ship Canal.
- 7.*J. I. KAMMAN, 35 Hand St., Rochester, N.Y.
1. J. KAY, B.A.Sc.,
On Overseas Service.
4. N. G. KEEFER, B.A.Sc.
On Overseas Service.
3. H. S. KERBY, B.A.Sc.,
On Overseas Service.
3. J. A. KERR, B.A.Sc., Toronto, Ont.
Water Works Dept.
7. G. E. KEWIN, B.A.Sc., Toronto, Ont.
Canadian Inspection Co.
1. J. A. KNIGHT, B.A.Sc.,
On Overseas Service.
- 2.*S. A. LANG, B.A.Sc., Rancagua, Chili.
With the Braden Copper Co.
- 7.*C. W. LATIMER, B.A.Sc., Penticton, B.C.
- 1.*R. E. LINDSAY, B.A.Sc.,
On Overseas Service.
7. N. H. LORIMER, B.A.Sc.,
On Overseas Service.
- 5.*O. G. LYE, B.A.Sc.,
On Overseas Service.
- 2.*W. A. MACDONALD, B.A.Sc., Cobalt, Ont.
- 2.*H. J. MACKENZIE, B.A.Sc.
On Overseas Service.
- 7.*A. M. MACKENZIE, B.A.Sc., Montreal, Que.
Engineering Dept., Bell Telephone Co. of Canada.
1. H. N. MACPHERSON, B.A.Sc., 2,306 Rose St., Regina, Sask.
3. A. H. MACQUARRIE, B.A.Sc.
On Overseas Service.
7. J. A. MARSHALL, B.A.Sc., Ryckmans, Ont.
- 1.*J. A. P. MARSHALL, B.A.Sc.,
On Overseas Service.
- 7.*R. G. MATTHEWS, B.A.Sc., Toronto, Ont.
Toronto Hydro Electric System.
- 3.*H. W. MAXWELL, B.A.Sc., St. Mary's, Ont.
- 1.*R. C. McDONALD, B.A.Sc., Ripley, Ont.
1. S. B. MCGILL, B.A.Sc., Toronto, Ont.

*Degree with honours.

1914—Continued.

7. D. L. McLAREN, B.A.Sc., Peterborough, Ont.
With Canadian General Electric Co.
- 1.*F. C. MECHIN, B.A.Sc., Halifax, N.S.
Imperial Oil Co.
1. *W. G. MILLAR, B.A.Sc.,
On Overseas Service.
- 1.*A. S. MILLER, B.A.Sc., Toronto, Ont.
Canadian Inspection Co.
- 6.*W. E. MILLIGAN, B.A.Sc., Rancagua, Chili.
With the Braden Copper Co.
- 7.*P. H. MILLS, B.A.Sc.,
On Overseas Service.
- 1.*J. S. MITCHELL, B.A.Sc.,
On Overseas Service.
1. J. R. MONTAGUE, B.A.Sc., 633 Coristine Bldg., Montreal, Que.
With A. R. Henry, M.E.
6. D. MORRISON, B.A.Sc., Bowmanville, Ont.
1. G. J. MULLINS, B.A.Sc., Toronto, Ont.
Harbour Commissioners.
- 1.*E. P. MUNTZ, B.A.Sc.,
On Overseas Service.
- 7.*C. L. NICHOLSON, B.A.Sc., 199 Concord Ave., Toronto, Ont.
Toronto Hydro-Electric System.
- 1.*J. B. NICHOLSON, B.A.Sc., Hamilton, Ont.
- 1.*C. NOECKER, B.A.Sc., Hamilton, Ont.
With Canadian Inspection Co.
1. J. A. OWENS, B.A.Sc., Toronto, Ont.
1. A. H. PARKER, B.A.Sc.,
On Overseas Service.
- 1.*R. G. PATTERSON, B.A.Sc.
On Overseas Service.
- 7.*J. D. PEART, B.A.Sc.
On Overseas Service.
1. C. W. PENNINGTON, B.A.Sc., Dundas, Ont.
- 1.*C. V. PERRY, B.A.Sc.,
On Overseas Service.
- 5.*W. E. PHILLIPS, B.A.Sc.,
On Overseas Service.
8. G. O. PHILP, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
1. P. H. RANEY, B.A.Sc.
On Overseas Service.
1. R. H. RICE, B.A.Sc., 27 Roxborough Drive, Toronto, Ont.
With Toronto-Hamilton Highway Commission.
7. A. S. ROBERTSON, B.A.Sc., Toronto, Ont.
With H.E.P.C.
- 4.*J. M. ROBERTSON, B.A.Sc.,
On Overseas Service.
7. H. D. ROTHWELL, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Com.
1. F. S. RUTHERFORD, B.A.Sc.,
On Overseas Service.
- 7.*F. M. SERVOS, B.A.Sc., Niagara-on-the-Lake, Ont.
- 1.*H. L. SHEPPARD, B.A.Sc.
On Overseas Service.

*Degree with honours.

1914—Continued

1. N. E. D. SHEPPARD, B.A.Sc., Ottawa, Ont.
Water Power Branch, Dept. of Interior.
1. S. SHUPE, B.A.Sc., Dunnville, Ont.
County Engineer.
6. A. W. SIME, B.A.Sc.
On Overseas Service.
- 1.*B. N. SIMPSON, B.A.Sc.
On Overseas Service.
1. C. E. SINCLAIR, B.A.Sc.
On Overseas Service.
- 1.*J. B. SKAITH, B.A.Sc. Toronto, Ont.
- 4.*W. C. SKINNER, B.A.Sc. Toronto, Ont.
1. H. M. SMITH, B.A.Sc. (deceased).
2. G. M. SMYTH, B.A.Sc.,
On Overseas Service.
- 1.*N. L. SOMERS, B.A.Sc., Sault Ste. Marie, Ont.
Cake Plant Engr., Algoma Steel Corp.
7. R. O. STANDING, B.A.Sc.,
On Overseas Service.
- 7.*E. C. R. STONEMAN, B.A.Sc., 215 Albany Ave., Toronto, Ont.
1. I. R. STROME, B.A.Sc.,
On Overseas Service.
3. S. G. TACKABERRY, B.A.Sc., Ottawa, Ont.
Dept. of Public Works.
2. J. S. TAYLOR, B.A.Sc., (killed in action, France, 1916).
- 1.*C. N. TEMES, B.A.Sc., 432 College Street, Toronto, Ont.
- 3.*E. H. TENNENT, B.A.Sc., 456 Ridout Street, London, Ont.
1. J. A. TILSTON, B.A.Sc.,
On Overseas Service.
- 1.*G. E. TRELOAR, M.A.Sc., Toronto, Ont.
- 7.*W. S. TULL, B.A.Sc., Louisburg, N.S.
Marconi Wireless Telegraph Co.
6. E. A. TWIDALE, B.A.Sc.
On Overseas Service.
- 1.*F. T. VAN DYKE, B.A.Sc., St. Catharines, Ont.
Section 1, Welland Ship Canal.
- 3.*M. F. VERITY, B.A.Sc.
On Overseas Service.
- 1.*H. O. WADDELL, B.A.Sc., Port Hope, Ont.
- 1.*H. W. WAGNER, B.A.Sc., 108 Springhurst Ave., Toronto, Ont.
- 1.*H. D. M. WALLACE, B.A.Sc.,
On Overseas Service.
1. P. L. WHITLEY, B.A.Sc., Gorrie, Ont.
- 6.*A. E. WIGLE, B.A.Sc., Nobel, Ont.
Canadian Explosives Limited.
- 7.*J. A. H. WIGLE, B.A.Sc. Kingsville, Ont.
- 4.*A. C. WILSON, B.A.Sc., Toronto, Ont.
Office of City Architect.
1. H. P. WILSON, B.A.Sc., Toronto, Ont.
Canadian Inspection Co.
- 2.*R. W. YOUNG, B.A.Sc., Rancagua, Chili, S.A.
With Braden Copper Co.

1915

1. L. S. ADLARD, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1915—Continued.

1. A. C. ANDERSON, B.A.Sc.,
On Overseas Service.
- 1.*G. A. ARKSEY, B.A.Sc. Creighton Mines, Ont.
2. R. M. ARTHUR, B.A.Sc.,
On Overseas Service.
1. F. D. AUSTIN, B.A.Sc.,
On Overseas Service.
7. G. V. BALL, B.A.Sc., Toronto, Ont.
- 7.*T. R. BANBURY, B.A.Sc.,
On Overseas Service.
7. V. A. BEACOCK, B.A.Sc.,
On Overseas Service.
- 1.*P. BENNETT, B.A.Sc., Calgary, Alta.
- 7.*H. M. BLACK, B.A.Sc., Toronto, Ont.
Shell Dept., Universal Tool Steel Co.
7. W. H. BONUS, B.A.Sc., Toronto, Ont.
Asst. Superintendent, University of Toronto.
- 6.*J. E. BREITHAUP, B.A.Sc. Kitchener, Ont.
With Breithaupt Tanning Co.
- 1.*E. D. G. BROUSE, B.A.Sc.,
On Overseas Service.
- 1.*L. R. BROWN, B.A.Sc., Sault Ste. Marie, Ont.
Toronto Chemical Co.
- 1.*F. M. BUCHANAN, B.A.Sc., Sydney, N.S.
With Dominion Tar and Chemical Co.
7. H. C. BUDD, B.A.Sc., Peterborough, Ont.
C.G.E. Co.
4. H. J. BURDEN, B.A.Sc.,
On Overseas Service.
1. F. N. D. CARMICHAEL, B.A.Sc.,
On Overseas Service.
- 4.*R. W. CATTO, B.A.Sc.
On Overseas Service.
1. R. M. COCKBURN, B.A.Sc.,
On Overseas Service.
- 1.*J. D. COOK, B.A.Sc., Toronto, Ont.
With Massey Harris Co.
- 1.*A. B. CREALOCK, B.A.Sc., Toronto, Ont.
Canadian Inspection Co.
- 1.*W. R. DA COSTA, B.A.Sc.,
On Overseas Service.
1. N. H. DANIEL, B.A.Sc.,
On Overseas Service.
- 3.*C. G. DAVEY, B.A.Sc., London, Ont.
Canadian Inspection Co.
- 7.*G. P. DAVIDSON, B.A.Sc.
On Overseas Service.
4. J. J. DAVIDSON, B.A.Sc.,
On Overseas Service.
7. W. A. DEAN, B.A.Sc.,
On Overseas Service.
- 1.*E. V. DEVERALL, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1915—Continued.

- 7.*J. DIBBLEE, B.A.Sc., Cordova, Ont.
With Cordova Mining Co.
- 1.*W. L. DICKSON, B.A.Sc., St. Catharines, Ont.
Canadian Inspection Co.
- 1.*G. A. DOWNEY, B.A.Sc.,
On Overseas Service.
4. G. R. EDWARDS, B.A.Sc., 1,263 King St. W., Toronto, Ont.
- 7.*R. V. ELLIOTT, B.A.Sc., Toronto, Ont.
Canadian Aeroplanes Ltd.
2. E. R. EMMERSON, B.A.Sc., Port Arthur, Ont.
1. A. C. EVANS, B.A.Sc.,
On Overseas Service.
1. H. S. FALCONER, B.A.Sc., Shelburne, Ont.
7. D. T. FLANNERY, B.A.Sc., Deloro, Ont.
Deloro Mining and Reduction Co.
1. J. W. H. FORD, B.A.Sc., London, Ont.
- 1.*W. R. FRASER, B.A.Sc., Allandale, Ont.
With G. T. Ry.
1. W. G. FRENCH, B.A.Sc.,
On Overseas Service.
- 1.*W. J. FULTON, B.A.Sc., Toronto, Ont.
G. S. Abrey, O.L.S.
1. R. D. GALBRAITH, B.A.Sc.,
On Overseas Service.
1. C. N. GEALE, B.A.Sc.,
On Overseas Service.
6. L. G. GLASS, B.A.Sc.,
On Overseas Service.
1. G. A. GOODERHAM, B.A.Sc.,
On Overseas Service.
- 7.*W. H. R. GOULD, B.A.Sc., Uxbridge, Ont.
- 4.*T. S. GRAHAM, B.A.Sc.
On Overseas Service.
- 1.*E. R. GRANGE, B.A.Sc.,
On Overseas Service.
7. G. D. GRAY, B.A.Sc., Welland, Ont.
Union Carbide Co.
3. J. GRAY, B.A.Sc.,
On Overseas Service.
7. G. E. GRIFFITHS, B.A.Sc.,
On Overseas Service.
2. M. S. HAAS, B.A.Sc.,
On Overseas Service.
2. D. S. HALFORD, B.A.Sc., Humboldt, Ariz.
Consolidated Arizona Smelting Co.
- 2.*W. T. HALL, B.A.Sc.,
On Overseas Service.
- 2 *J. E. HANLON, B.A.Sc.,
On Overseas Service.
1. C. HAYWARD, B.A.Sc., Toronto, Ont.
Aird, Murray & Rose.
- 2.*L. T. HIGGINS, B.A.Sc., Rancagua, Chili.
Braden Copper Co.
- 1.*C. E. HOGARTH, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1915—Continued.

7. T. P. IRELAND, B.A.Sc.,
Canadian Inspection Co. Hamilton, Ont.
- 7.*G. A. IRONSIDE, B.A.Sc.
On Overseas Service.
- 1.*C. W. H. JACKSON, B.A.Sc., Coboconk, Ont.
7. K. A. JEFFERSON, B.A.Sc.,
Empire Mfg. Co. London, Ont.
- 1.*G. W. F. JOHNSTON, B.A.Sc., Brampton, Ont.
7. C. M. JONES, B.A.Sc., Toronto, Ont.
1. E. H. JUPP, B.A.Sc.,
On Overseas Service.
7. C. R. KEYS, B.A.Sc., Toronto, Ont.
Curtiss Aeroplanes and Motors Ltd.
- 5.*H. KOHL, B.A.Sc., Longford, Ont.
Standard Chemical Co.
- 1.*R. E. LAIDLAW, B.A.Sc., Detroit, Mich.
With M. C. R. Rd.
1. *G. J. LAMB, B.A.Sc., Walkerton, Ont.
- 7.*G. W. LAWRENCE, B.A.Sc.,
On Overseas Service.
- 1.*H. O. LEACH, B.A.Sc.,
On Overseas Service.
- 3.*R. H. LLOYD, B.A.Sc.,
On Overseas Service.
1. W. E. LOCKHART, B.A.Sc.,
On Overseas Service.
- 1.*W. E. LONGWORTHY, B.A.Sc.,
On Overseas Service.
- 1.*C. T. LOUNT, B.A.Sc., Regina, Sask.
- 1.*R. G. LYE, B.A.Sc., Toronto, Ont.
- 1.*C. A. MACDONALD, B.A.Sc., Ridgetown, Ont.
2. I. M. MACDONELL, B.A.Sc.,
On Overseas Service.
- 1.*H. E. MACPHERSON, B.A.Sc., St. Thomas, Ont.
- 1.*W. R. McCAFFREY, B.A.Sc.,
On Overseas Service.
- 1.*C. R. McCORT, B.A.Sc.,
On Overseas Service.
- 1.*J. P. McDONALD, B.A.Sc., Ottawa, Ont.
Topographical Surveys Br., Dept. of the Interior.
- 1.*K. D. McDONALD, B.A.Sc.,
On Overseas Service.
- 3.*W. R. McGIE, B.A.Sc., Walkerville, Ont.
With Ford Motor Car Co.
- 1.*D. F. MCGUGAN, B.A.Sc., 1,005 Fourth Ave., Detroit, Mich.
7. J. S. MCINTYRE, B.A.Sc., Toronto, Ont.
With H.E.P.C.
1. E. V. MCKAGUE, B.A.Sc.,
On Overseas Service.
7. E. T. MARTIN, B.A.Sc., Waddington, N.Y.
- 1.*W. H. MEITZ, B.A.Sc., Detroit, Mich.
Albert Albrecht Co.
- 1.*G. MITCHELL, B.A.Sc.
On Overseas Service.

*Degree with honours.

1915—Continued.

1. J. T. MOGAN, B.A.Sc., Buffalo, N.Y.
With Buffalo Copper and Brass Rolling Co.
- 7.*E. M. MONTEITH, B.A.Sc.,
On Overseas Service.
- 4.*A. MORRIS, B.A.Sc.,
On Overseas Service.
1. B. M. MORRIS, B.A.Sc.,
(Killed in action, France, 1917).
- 5.*W. D. MORRIS, B.A.Sc., London, England
Imperial Munitions Board.
2. J. M. MUIR, B.A.Sc.,
On Overseas Service.
- 1.*M. A. NEILSON, B.A.Sc., Toronto, Ont.
Inspector, W. H. Banfield & Sons.
- 1.*H. S. NICKLIN, B.A.Sc., Acton, Ont.
1. E. B. O'CONNOR, B.A.Sc., Toronto, Ont.
1. W. M. OMAND, B.A.Sc., Armco, Middleton, Ohio.
East Side Works.
- 1.*R. A. PAUL, B.A.Sc.,
On Overseas Service.
- 3.*A. N. PAYNE, B.A.Sc., Toronto, Ont.
1. L. P. PEARCE, B.A.Sc.,
On Overseas Service.
- 1.*H. M. PECK, B.A.Sc., Toronto, Ont.
1. S. M. PETERKIN, B.A.Sc.,
On Overseas Service.
- 1.*C. F. PORTER, B.A.Sc., Windsor, Ont.
- 1.*J. E. PORTER, B.A.Sc., Wingham, Ont.
2. W. D. POWELL, B.A.Sc.
On Overseas Service.
7. W. F. P. PURDY, B.A.Sc., Wardsville, Ont.
1. W. E. RALEY, B.A.Sc., (died of wounds received in action, 1916).
1. C. C. RANCE, B.A.Sc., Toronto, Ont.
- 1.*G. RANKIN, B.A.Sc.,
On Overseas Service.
1. W. B. REDMAN, B.A.Sc.,
On Overseas Service.
- 3.*F. G. REID, B.A.Sc., Cleveland, Ohio.
Frantz Premier Co.
6. P. J. RELYEA, B.A.Sc., London, England.
Imperial Munitions Board.
- 1.*A. A. RICHARDSON, B.A.Sc.
On Overseas Service.
- 3.*A. S. ROBERTSON, B.A.Sc.,
On Overseas Service.
1. J. T. ROSE, B.A.Sc.
On Overseas Service.
- 7.*A. C. ROSS, B.A.Sc., Toronto, Ont.
Imperial Munitions Board.
- 1.*H. M. ROWE, B.A.Sc.,
On Overseas Service.
4. G. W. RUTTER, B.A.Sc.,
On Overseas Service.

* Degree with honours.

1915—Continued.

- 7.*E. W. SAVAGE, B.A.Sc.,
 With Dominion Government. Ottawa, Ont.
7. A. G. SCOTT, B.A.Sc.,
 On Overseas Service.
- 1.*E. H. SCOTT, B.A.Sc.,
 On Overseas Service.
- 1.*R. G. SCOTT, B.A.Sc.,
 On Overseas Service.
7. N. F. SEYMOUR, B.A.Sc.,
 On Overseas Service.
- 1.*J. H. SHAW, B.A.Sc.,
 With T. Eaton Co. Toronto, Ont.
1. J. S. SHEEHY, B.A.Sc.,
 With Buffalo Copper and Brass Rolling Co. Buffalo, N.Y.
3. W. G. SHIER, B.A.Sc., (died of wounds received in action, 1916).
- 1.*C. N. SIMPSON, B.A.Sc.,
 Toronto, Ont.
1. R. B. SINCLAIR, B.A.Sc.,
 On Overseas Service.
3. A. H. SMYTH, B.A.Sc.,
 Strathroy, Ont.
- 7.*W. A. STEEL, B.A.Sc.,
 On Overseas Service.
2. J. B. STITT, B.A.Sc.,
 Braden Copper Co. Rancagua, Chili.
3. J. D. STONE, B.A.Sc.,
 Chatham, Ont.
- 7.*G. C. STOREY, B.A.Sc.,
 On Overseas Service.
- 2.*J. E. C. STROUD, B.A.Sc.,
 With Granby Consol'd Mining and Smelting Co. Anyox, B.C.
- 7.*A. N. SUHLER, B.A.Sc.,
 Pt. Edward, Ont.
7. A. N. TAYLOR, B.A.Sc.,
 Canadian Inspection Co. Toronto, Ont.
1. L. B. TILLSON, B.A.Sc.,
 On Overseas Service.
1. J. A. TOM, B.A.Sc.,
 On Overseas Service.
- 5.*W. UFFELMANN, B.A.Sc.,
 Penman-Littlehales Chemical Co. Syracuse, N.Y.
- 7.*A. L. WARD, B.A.Sc.,
 On Overseas Service.
- 1.*F. E. WEIR, B.A.Sc.,
 On Overseas Service.
- 1.*C. W. WEST, B.A.Sc.,
 On Overseas Service.
1. J. N. WILLIAMS, B.A.Sc.,
 On Overseas Service.
- 1.*J. C. WILSON, B.A.Sc.,
 Wingham, Ont.
- 1.*H. A. WOOD, B.A.Sc.,
 On Overseas Service.
7. H. K. WYMAN, B.A.Sc.,
 On Overseas Service.

1916.

1. E. B. ALLAN, B.A.Sc.,
 On Overseas Service.
7. F. W. BALL, B.A.Sc.,
 24 Edward St. London, Ont.

*Degree with honours.

1916—Continued.

1. L. F. BARNES, B.A.Sc.,
On Overseas Service.
1. B. W. BEMROSE, B.A.Sc.,
On Overseas Service.
- 5.*W. G. BIRRELL, B.A.Sc.,
British Acetones Ltd. Toronto, Ont.
- 8.*D. BOYD, B.A.Sc., 348 Albany Ave., Toronto, Ont.
3. H. E. BREULS, B.A.Sc., 845 Bloor St. W., Toronto, Ont.
- 5.*N. B. BROWN, B.A.Sc.,
Shawinigan Electro Metals Co. Shawinigan, Que.
3. J. R. CHAPMAN, B.A.Sc.,
On Overseas Service.
- 7.*K. CUMMING, B.A.Sc.,
Marconi Wireless Telegraph Co. Montreal, Que.
3. J. N. CUNNINGHAM, B.A.Sc.,
On Overseas Service.
1. R. S. DALE, B.A.Sc., Toronto, Ont.
Paterson Mfg. Co.
- 7.*L. G. DANDENO, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
3. J. F. DELISLE, B.A.Sc., Chicoutimi, Que.
1. W. L. DOBBIN, B.A.Sc.,
On Overseas Service.
1. J. H. EASTWOOD, B.A.Sc.,
On Overseas Service.
7. R. L. FLEGG, B.A.Sc., Montreal, Que.
1. D. B. GARDNER, B.A.Sc.,
On Overseas Service.
- 7.*E. G. GURNETT, B.A.Sc., 141 Major St., Toronto, Ont.
With Hydro-Electric Power Commission.
- 1.*M. GUROFSKY, B.A.Sc., 397 Markham St., Toronto, Ont.
1. G. C. HAGEDORN, B.A.Sc.,
On Overseas Service.
1. R. M. HARE, B.A.Sc., 247 Brunswick Ave., Toronto, Ont.
1. L. W. HARRON, B.A.Sc.,
On Overseas Service.
1. C. E. HASTINGS, B.A.Sc.,
On Overseas Service.
4. R. T. C. HOIDGE, B.A.Sc.,
On Overseas Service.
1. K. B. JACKSON, B.A.Sc.,
On Overseas Service.
- 7.*H. C. KARN, B.A.Sc.,
Northern Electric Co. Montreal, P.Q.
7. G. F. KING, B.A.Sc.,
On Overseas Service.
1. J. R. KIRBY, B.A.Sc., Toronto, Ont.
Inspector, Canadian Fire Underwriters Association.
1. R. W. KIRBY, B.A.Sc.,
On Overseas Service.
3. R. W. KIRN, B.A.Sc., 728 Stewart St., Peterborough, Ont.
6. S. J. KRUG, B.A.Sc.,
On Overseas Service.
1. L. A. C. LEE, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1916—Continued.

- 2.*B. A. McCRODAN, B.A.Sc., Box 2,168, Globe, Arizona.
 3. R. A. MACDONALD, B.A.Sc.,
On Overseas Service.
 1.*O. MARGISON, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
 1 *W. B. MITCHELL, B.A.Sc., 150 Wharncliffe Rd., London, Ont.
 1.*C. H. NEY, B.A.Sc., Aurora, Ont.,
 3. J. C. NEWCOMBE, B.A.Sc.,
On Overseas Service.
 7. G. E. NOTT, B.A.Sc.,
On Overseas Service.
 1. E. A. O'CALLAGHAN, B.A.Sc., Cornwall, Ont.
 6.*C. E. OLIVER, B.A.Sc., 14 Metcalfe St., Ottawa, Ont.,
Canadian Wood Molybdenite Co.
 1. N. L. POWELL, B.A.Sc.,
On Overseas Service.
 1. J. E. PRINGLE, B.A.Sc.,
On Overseas Service.
 7. J. RICHMOND, B.A.Sc., Montreal, Que.,
Northern Electric Co.
 1. H. C. ROSE, B.A.Sc.,
On Overseas Service.
 1.*S. R. ROSS, B.A.Sc., 175 Brunswick Ave., Toronto, Ont.
 7. S. W. ROSS, B.A.Sc., 213 Beverley Street, Toronto, Ont.
 3.*J. P. RUSSELL, B.A.Sc., 27 Whitney Ave., Toronto, Ont.
 1. W. B. SCOTT, B.A.Sc., 764 Logan Ave., Toronto, Ont.
 1.*R. L. SEABORNE, B.A.Sc., 15 Tranby Ave., Toronto, Ont.
 1.*R. L. SIEVEWRIGHT, B.A.Sc., 304 Hogarth Ave., Detroit, Mich.
 4. J. L. SKINNER, B.A.Sc., Fairie Ave., Detroit, Mich.
 7. W. A. SMELSER, B.A.Sc., Toronto, Ont.,
Co. Sgt.-Major Instructor, Canadian School of Musketry.
 1. W. H. STARK, B.A.Sc., Toronto, Ont.,
McGregor & McIntyre.
 1.*J. A. SUREDA, B.A.Sc., Utuado, Porto Rico.
 1. J. E. TREMAYNE, B.A.Sc.,
On Overseas Service.
 5.*F. W. WARD, B.A.Sc., Toronto, Ont.,
Laboratory Attendant, Dept. of Biochemistry, University of Toronto.
 1.*R. C. WARD, B.A.Sc., Toronto, Ont.,
Toronto Iron Works.
 7. A. R. WELLS, B.A.Sc.,
On Overseas Service.
 7.*H. S. WEPPLER, B.A.Sc., Toronto, Ont.,
Demonstrator in Electrical Engineering, University of Toronto.
 7. A. E. WIDDICOMBE, B.A.Sc.,
On Overseas Service.

*Degree with honours.

CERTIFICATES.
MINERALOGY AND ASSAYING.

1896. G. JOHNSTON.
1897. E. B. WEBSTER.
1901. G. A. HUNT.

ELECTRICITY.

1896. A. T. TYE, c/o Empresa Hanseatica, Barranquilla, Columbia, South
America.
1898. A. N. McMILLAN, Penetanguishene, Ont.
1900. A. H. SMITH.
1896. E. I. SIFTON, London, Ont.
Manager, London Electric Construction Co.
1903. W. ELWELL (deceased).

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A

Abendana, E. M.....	1914	Anderson, R. M.....	1908
Acres, H. G.....	1903	Anderson, A. S. (deceased)....	1913
Adams, J. H.....	1910	Andrews, E.....	1897
Adams, O. F.....	1910	Andrews, F. C. (deceased)....	1914
Adlard, L. S.....	1915	Angus, H. H.....	1903
Adsett, F. C.....	1914	Angus, R. W.....	1894
Agnew, N. J.....	1910	Apsey, J. F.....	1888
Aitken, J.	1911	Archer, E. G.....	1911
Akers, H. G.....	1908	Ardagh, A. G.....	1893
Alexander, J. H.....	1904	Ardagh, E. G. R.....	1900
Alison, T. H.....	1892	Arens, A. H.....	1906
Alison, J. G. R.....	1903	Arens, H. W. (deceased).	1905
Allan, E. B.....	1916	Arens, R. J.....	1908
Allan, J. R.....	1892	Arens, E. G.....	1909
Allan, J. L.....	1900	Arksey, G. A.....	1915
Allan, L. F.....	1908	Armer, C. E.....	1914
Allan, L. B.....	1911	Armer, J. C.....	1906
Allen, F. G.....	1907	Armour, R. H.....	1905
Allen, R. J.....	1913	Armstrong, J.....	1895
Allison, C. B.....	1908	Armstrong, H. V.....	1906
Alport, F.....	1906	Arthur, R. M.....	1915
Alton, J. L.....	1914	Ashbridge, W. T.....	1888
Amos, W. L.....	1906	Augustine, A. P.....	1907
Amsden, W. G.....	1910	Austin, E. T.....	1909
Anderson, A. C.....	1915	Austin, F. D.....	1915
Anderson, A. G.....	1892	Avery, C. R.....	1913
Anderson, F. J.....	1907	Aylesworth, C. B.....	1905

B

Badgley, L. A.....	1911	Barker, H. F.....	1894
Bain, J. A.....	1900	Barley, J. H.....	1900
Bain, J. W.....	1896	Barnes, L. F.....	1916
Baird, J. A.....	1910	Barnett, H. A.....	1910
Baird, W. J.....	1910	Barrett, R. H. (deceased).	1901
Baker, M. H.....	1906	Barrett, J. H.	1904
Baldwin, F. W.....	1906	Barry, W. H.....	1909
Baldwin, L. C. M.....	1913	Bartlett, E.....	1908
Ball, E. F.....	1888	Bartley, T. H.....	1911
Ball, F. W.....	1916	Bates, M. (deceased).	1906
Ball, W. V.....	1915	Batten, H. L.....	1911
Ballantyne, H. F.....	1893	Beacock, V. A.....	1915
Banbury, T. R.....	1915	Beatty, F. W.....	1913
Banks, H. R.....	1914	Beatty, W. B.	1913
Banting, E. W.....	1906	Beatty, H. J.....	1891
Barber, F.....	1906	Beatty, W. G.....	1901
Barber, H. C.....	1908	Beatty, J. A.....	1903
Barber, H. G.....	1902	Beauregard, A. T.....	1894
Barber, T.....	1899	Beckstedt, R.D.S.....	1909
Barber, W.....	1905	Bedard, E. L.....	1914

Bedard, H. J.....	1914	Bowman, H. D.....	1907
Bedford, F. J. (deceased)	1908	Bowman, H. J.....	1885
Begg, W. A.....	1905	Boyd, D.....	1916
Beith, R. E.....	1909	Boyd, D. G.....	1894
Belcher, J. T.....	1914	Boyd, W. H.....	1898
Bell, C. A.....	1913	Brace, J. H.....	1908
Bell, G. G.....	1905-1908	Brackinreid, T. W.....	1911
Bellisile, J. P. (deceased):	1906	Brady, W. S.....	1907
Bemrose, B. W.....	1916	Brandon, E. T. J.....	1901
Bennett, G. A.....	1909	Brandon, H. E.....	1906
Bennett, P.....	1915	Bray, L. T.....	1900
Bennett, S. G.....	1914	Brebner, G. (deceased).....	1895
Bergey, A. E.....	1894	Brecken, P. R.....	1908
Berkeley, G. L.....	1911	Breithaupt, J. E.....	1915
Berry, E. W.....	1910	Brereton, L. R.....	1913
Bertram, G. M.....	1910	Brereton, W. P.....	1901
Betts, H. H.....	1906	Breslove, J.....	1903
Beynon, D. E.....	1906	Breuls, H. E.....	1916
Billings, J. H.....	1911	Brian, M. E.....	1906
Bingham, H. C.....	1910	Bristol, W. M.....	1905
Binns, P. V.....	1914	Broadfoot, F. C.....	1906
Birchard, E. R.....	1909	Brock, A. F.....	1910
Birrell, W. G.....	1916	Brock, W. M.....	1911
Bissett, D. G.....	1910	Brodie, W. M.....	1895
Bissett, G. W.....	1906	Broughton, G. H.....	1907
Bissett, J. R.....	1911	Broughton, J. T.....	1902
Black, B. S.....	1913	Brouse, E. D. G.....	1915
Black, G. E.....	1908	Brouse, W. H. D.....	1911
Black, H. M.....	1915	Brown, C. E.....	1909
Black, W. D.....	1909	Brown, D. B.....	1888
Blackwell, R. H. H.....	1910	Brown, E. I.....	1908
Blackwood, A. E.....	1895	Brown, G. L.....	1893
Blackwood, W. C.....	1906	Brown, H.....	1911
Blain, D.....	1913	Brown, H. H.....	1914
Blair, W. J.....	1902	Brown, J. A.....	1907
Bleakley, J. F.....	1885	Brown, J. M.....	1902
Blizard, D. C.....	1909	Brown, L. L.....	1895
Blyth, J. M.....	1914	Brown, L. R.....	1915
Boeckh, J. C.....	1906	Brown, N. B.....	1913
Bonham, A. R.....	1914	Brown, T. D.....	1904
Bonnell, M. B.....	1904	Brown, T. W.....	1906
Bonter, E. R.....	1913	Brown, W. D.....	1914
Bonus, W. H.....	1915	Browne, E. W.....	1909
Boswell, E. J.....	1895	Browne, M. O.....	1910
Boswell, M. C.....	1900	Bruce, W. J.....	1907
Boswell, W. A.....	1911	Bryce, W. F. M.....	1908
Boulton, W. J.....	1909	Buchan, P. H.....	1908
Boustead, W. E. (deceased) ..	1890	Buchanan, F. M.....	1915
Bow, J. A.....	1897	Buchanan, J. A.....	1909
Bowen, G. H.....	1909	Buchanan, T. R.....	1913
Bower, J. H. W.....	1914	Buchanan, W. B.....	1913
Bowers, W. J. (deceased).....	1901	Bucke, M. A. (deceased).....	1890
Bowes, H. F.....	1908	Bucke, W. A.....	1894
Bowman, A. M.....	1886	Budd, H. C.....	1915
Bowman, E. P.....	1910	Bunnell, A. E. K.....	1906
Bowman, F.....	1911	Burd, J. H.....	1903
Bowman, F. M.....	1890	Burden, H. J.....	1915

Burgess, E. L.....	1903	Burnham, N. G. H. (deceased)	1910
Burgess, J. R.....	1910	Burnside, J. T. M.....	1899
Burley, R. J.....	1904	Burrows, B. H. A. (deceased)	1913
Burns, D.....	1883	Burwash, L. T.....	1896
Burns, J. C. (deceased).....	1887	Burwash, N. A.....	1903
Burns, J. E.....	1909	Bush, C. E.....	1907
Burnham, F. W.....	1904	Byam, F. M.....	1906

C

Cain, E. T.....	1911	Chadwick, W. W.....	1911
Calder, J. W.....	1904	Challen, G.	1908
Caldwell, W. B.....	1913	Challies, J. B.....	1904
Cale, W. C.....	1910	Chalmers, W. J.....	1889
Cameron, N. C.....	1904	Chalmers, J.....	1894
Cameron, A.....	1906	Chambers, E. V.....	1914
Cameron, M. G.....	1909	Chandler, R. B.....	1911
Cameron, C. S.....	1911	Chapman, J. R.....	1916
Cameron, O. L.....	1913	Charlesworth, L. C.....	1893
Campbell, A. D.....	1910	Charlton, H. W.....	1897
Campbell, A. J.....	1904	Chase, A. V.....	1905
Campbell, A. M.....	1904	Cherry, P. G.....	1911
Campbell, D. H.....	1914	Chesnut, A. W. (deceased)...	1910
Campbell, H. M.....	1914	Chesnut, E. F.....	1911
Campbell, J. J.....	1914	Chesnut, F. H.....	1908
Campbell, W. G.....	1902	Chesnut, V. S.....	1909
Campbell, A. R. (deceased)...	1902	Chewett, H. J.....	1888
Campbell, R. J.....	1895	Chilver, C. A.....	1904
Campbell, G. M.....	1896	Chilver, H. L.....	1904
Campbell, L. L.....	1913	Chisholm, D. C.....	1910
Campbell, W. C.....	1905	Christie, W.....	1902
Campbell, N. A.....	1908	Christie, U. W.....	1904
Campbell, R. A.....	1909	Christie, A. G.....	1901
Campbell, A. W.....	1906	Christie, R. M.....	1914
Campbell, J. E.....	1908	Chubbuck, L. B.....	1899
Campbell, C. D.....	1911	Clark, H.....	1913
Candee, C. N.....	1914	Clark, J.....	1900
Canniff, C. M.....	1888	Clark, G. T.....	1906
Carey, B.....	1889	Clark, F. W....	1911
Carlyle, R. T.....	1914	Clark, H. J.....	1911
Carlyle, W. M.....	1910	Clarke, F. F.....	1903
Carmichael, C. G. (deceased)..	1902	Clarkson, G. E.....	1913
Carmichael, F. N. D.....	1915	Claveau, J. A.	1910
Carmichael, R. M.....	1913	Cleary, F. S. (deceased).....	1911
Carpenter, H. S.....	1897	Clegg, B. D.....	1913
Carrie, G. M.....	1913	Clement, W. A.....	1889
Carroll, A. M.....	1908	Clement, S. R. A.....	1905
Carroll, M. J.....	1906	Cline, C. G.....	1909
Carscallen, H. R.....	1908	Clipsham, K. M.....	1914
Carson, W. R.....	1905	Clothier, G. A.....	1899
Carter, J. M.....	1914	Coates, P. C.....	1904
Carter, W. E. H.....	1898	Cockburn, J. R.....	1901
Caster, J. H.....	1907	Cockburn, L. S.....	1910
Catto, R. W.....	1915	Cockburn, R. M.....	1915
Caudwell, N. S.....	1910	Code, A. G.....	1910
Cavell, E.....	1907	Code, S. B.....	1904
Chace, W. G.....	1901	Code, T. F. (deceased).....	1904
Chadwick, R. E. C.	1906	Cole, D. B.....	1911

Cole, W. E. (deceased).....	1908	Cowan, W. A.....	1904
Cole, C. R.....	1910	Cowper, G. C.....	1907
Coleman, J. H.....	1913	Coyne, H.....	1908
Colhoun, G. A.....	1906	Craig, J. A.....	1899
Collett, W. C.....	1908	Craig, J. H.....	1910
Collinson, J. G.....	1909	Craig, S. E.....	1904
Colquhoun, G. A.....	1910	Crashley, J. W.....	1914
Coltham, G. W.....	1909	Crawford, A. W.....	1914
Conlon, F. T.....	1902	Crealock, A. B.....	1915
Connell, C. B. B.....	1907	Creighton, A. G.....	1906
Connor, H. V.....	1902	Crerar, S. R.....	1904
Connor, A. W.....	1895	Crosby, N. L. R.....	1905
Cooch, H. A.....	1909	Crosby, T. H.....	1909
Cook, A. S.....	1911	Crouch, M. E.....	1911
Cook, G. M.....	1913	Cruthers, W. M.....	1911
Cook, J. D.....	1915	Culbert, M. T. (deceased)....	1902
Cook, W. A. Mc.....	1906	Culbert, J. V.....	1907
Coombs, J. A.....	1913	Cumming, J. D.....	1908
Coon, B. R.....	1913	Cumming, R.....	1916
Cooper, C.....	1899	Cumming, K.....	1902
Corman, W. E.....	1909	Cummins, O. F.....	1911
Cornell, C. W.....	1911	Cunerty, T. J.....	1911
Corrigan, G. D. (deceased)....	1890	Cunningham, C. H.....	1911
Corrigan, T. E.....	1905	Cunningham, J. N.....	1916
Cory, R. Y.....	1908	Cunningham, R. H.....	1909
Coulson, C. L.....	1903	Currie, W. M.....	1904
Courtice, E. D. W.....	1914	Curtis, W. T.....	1913
Cousins, E. L.....	1906	Curzon, J. H.....	1911
Coulthard, R. M.....	1899	Cuthbertson, W.....	1914

D

Da Costa, W. R.....	1915	Davison, A. E.....	1903
Dahl, A. D.....	1908	Dawson, I. H.....	1909
Dale, R. S.....	1916	Deacon, T. R.....	1891
Dallyn, F. A.....	1909	Dean, C. D.....	1910
D'Alton, F. K.....	1911	Dean, W. A.....	1915
Dalton, G. F.....	1914	Death, N. P. F.....	1909
Dandeno, L. G.....	1916	DeCew, J. A.....	1896
Daniel, N. H.....	1915	De Guerre, F. C.....	1911
Daniels, W. N.....	1906	Deitch, E. L.....	1913
Danks, F. A.....	1908	Delahaye, W. H.....	1909
Danks, C. N.....	1909	Delamere, R. D.....	1914
Dann, E. M. (deceased)....	1909	De Laporte, A. V.....	1910
Darling, E. H.....	1898	Delisle, J. L.....	1916
Darroch, J.....	1908	Depew, H. H.....	1904
Dashwood, R.....	1914	Derham, W. P.....	1909
Dates, A. J.....	1913	Deverall, E. V.....	1915
Davey, C. G.....	1915	Diamond, R. W.....	1913
Davidson, R. D.....	1914	Dibblee, J.....	1915
Davidson, G. P.....	1915	Dickinson, E. D.....	1900
Davidson, J. J.....	1915	Dickson, G. W.....	1900
Davis, R.....	1907	Dickson, W. L.....	1915
Davis, A. I.....	1909	Dill, C. W.....	1891
Davis, H. W.....	1909	Dixon, H. A.....	1900
Davis, H. C.....	1909	Dobbin, R. L.....	1910
Davis, W. B.....	1911	Dobbin, W. L.....	1916
Davison, J. E.....	1900	Dobie, J. S.....	1895

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Dobson, W. P.....	1910	Duff, W. A.....	1901
Dodds, W. A.....	1909	Duggan, G. H.....	1883
Doncaster, L. W.....	1911	Dunbar, W. B.....	1911
Doorly, H. C. (deceased)	1908	Duncan, J. M.....	1910
Douglas, F. W.....	1914	Duncan, W. G.....	1913
Douglas, R. H.....	1908, 1909	Dundass, C. S.....	1906
Douglas, W. E.....	1902	Dunlop, R. J.....	1902
Downey, G. A.....	1915	Dunn, T. H.....	1893
Downing, F. H.....	1911	Dyer, F. C.....	1908
Duff, J. A. (deceased).....	1890		

E

Eagleson, F. M.....	1908	Elliott, J. C.....	1899
Eason, D. E.....	1901	Ellis, S. D. (deceased).....	1914
Eastwood, J. H.....	1916	Elwell, W. (deceased).....	1902
Eckert, C. H.....	1911	Emery, V. H.....	1910
Edwards, W. M.....	1902	Emmerson, E. R.....	1915
Edwards, C.....	1908	Empey, J. M.....	1902
Edwards, G. R.....	1915	English, A. B. (deceased).....	1890
Edwards, H. C.....	1914	Evans, A. C.....	1915
Elder, A. J.....	1904	Evans, S. D.....	1907
Elliot, J. A.....	1911	Evans, S. L.....	1908
Elliot, R. V.....	1915	Evans, W. J.....	1910
Elliott, J. A.....	1914	Ewart, J. A.....	1894
Elliott, G. R.....	1911	Ewart, F. R.....	1907
Elliott, C. F.....	1911	Ewing, E. O.....	1908
Elliott, H. F.....	1914	Eyres, H. E.....	1914
Elliott, H. P.....	1896		

F

Fairbairn, J. M. R.....	1893	Fletcher, A. W.....	1910
Fairchild, C.....	1892	Fletcher, F. T.....	1910
Fairlie, H. W.....	1910	Fletcher, J. A.....	1910
Falconer, F. S.....	1909	Flint, C.....	1908
Falconer, H. S.....	1915	Flint, T. R. C.....	1910
Falls, O. M.....	1914	Flook, S. E.....	1911
Fargey, T. A.....	1909	Flynn, C. C.....	1911
Farrell, K. A.....	1911	Follett, R. C.....	1910
Farrelly, T. J.....	1911	Foote, F. F.....	1913
Fear, S. L.....	1906	Forbes, D. L. H.....	1902
Fensom, C. J.....	1903	Ford, A. L.....	1904
Ferguson, C. R.....	1910	Ford, J. W. H.....	1915
Ferguson, D. G.....	1914	Foreman, J. L.....	1914
Ferguson, G. H.....	1905	Foreman, J. M.....	1910
Ferguson, J. B.....	1909	Forman, W. E.....	1899
Ferguson, J. W.....	1910	Forrester, C.....	1893
Fergusson, A. T.....	1909	Forward, E. A.....	1897
Fierheller, H. S. (deceased)....	1905	Forward, C. C.....	1906
Fingland, W.....	1893	Foster, A. H.....	1908
Fiddes, F. R.....	1913	Foster, W. J.....	1910
Fisken, J. B. K.....	1910	Foulds, W. C.....	1910
Flanagan, O. L.....	1908	Francis, Walter J.....	1893
Flannery, D. T.....	1915	Francis, G. C.....	1908
Fleck, J. G.....	1904	Frankel, E. L.....	1911
Flegg, R. L.....	1916	Franklin, H. J.....	1914
Fleming, D. H.....	1913	Fraser, A.....	1910
Fleming, G. O.....	1914	Fraser, W. R.....	1915
Fleming, G. R. S.....	1907	Fredin, J.....	1910
Fleming, J. S. (deceased).....	1914	Freeland, E. E.....	1911

Freeman, T. E.....	1909	Fuce, E. O.....	1903
Freeman, J. R.....	1911	Fuller, C. H. R.....	1914
French, W. G.....	1915	Fuller, R. J.....	1911
Frid, H. P.....	1911-1915	Fullerton, C. H.....	1900
Frost, E. R.....	1909	Fulton, W. J.....	1915
Frost, J. G. G.....	1914	Fux, P. C.....	1907

G

Gaby, F. A.....	1903	Gould, W. H. R.....	1915
Gagne, S. (deceased).....	1901	Gourlay, V. F.....	1910
Galbraith, J. S.....	1913	Gourlay, W. A.....	1903
Galbraith, R. D.....	1915	Graham, C. W.....	1906
Gall, H.....	1910	Graham, E. B.....	1910
Galletly, J. S.....	1907	Graham, G. W.....	1907
Galt, G. (deceased).....	1907	Graham, D. A.....	1909
Gardner, D. B.....	1916	Graham, T. S.....	1915
Gardner, J. C.....	1903	Grange, E. R.....	1915
Garland, M. L.....	1890	Grant, W. F.....	1898
Garrow, A. B.....	1907	Grant, R. R.....	1909
Geale, C. N.....	1915	Grasett, C. S.....	1907
Gear, S. S.....	1908	Grassie, C. A.....	1908
George, R. E.....	1903	Gray, A.....	1904
Gibbons, J.....	1888	Gray, A. G.....	1913
Gibson, A. E.....	1902	Gray, A. T.....	1897
Gibson, J. M.....	1910	Gray, A. J.....	1913
Gibson, M. M.....	1910	Gray, E. R.....	1913
Gibson, N. R.....	1901	Gray, G. D.....	1915
Gibson, W. S.....	1904	Gray, J.....	1915
Gill, E. I.....	1914	Gray, J. E.....	1909
Gill, J. R.....	1914	Gray, W. W.....	1904
Gillespie, P.....	1903	Green, R. E.....	1911
Gillies, A.....	1907	Greene, E. A.....	1911
Glass, L. G.....	1915	Greene, G. E. D.....	1909
Glover, A. E.....	1909	Greene, P. W.....	1906
Goad, V. A. E.....	1910	Greene, R. L.....	1910
Goldie, A. R.....	1893	Greene, W. H.....	1909
Goodall, J. N.....	1904	Greenwood, W. K.....	1904
Gooderham, A. E.....	1909	Grierson, C. I.....	1914
Gooderham, G. A.....	1915	Griffiths, G. E.....	1915
Gooderham, J. L.....	1911	Guernsey, F. W.....	1895
Goodeve, V. S.....	1910	Gulley, C. L.....	1908
Goodman, H. M.....	1913	Gunn, W. W.....	1909
Goodwin, A. C.....	1902	Gurnett, E. G.....	1916
Goodwin, J. B.....	1892	Gurney, W. C.....	1896
Gordon, J. P.....	1904	Gurofsky, M.....	1916
Gordon, W. A.....	1910	Guest, W. S.....	1900
Gouinlock, R. W.....	1914	Guy, E.....	1899

H

Haas, M. S.....	1915	Hall, W. H.....	1914
Hackner, J. W.....	1908	Hall, W. T.....	1915
Hadcock, J. P.....	1913	Hally, G. H.....	1914
Hagarty, R. E. W.....	1907	Hamer, A. T. E.....	1901
Hagedorn, G. C.....	1916	Hamilton, J. F.....	1903
Haight, H. V.....	1896	Hamilton, C. B.....	1906
Halford, D. S.....	1915	Hamilton, C. T.....	1907
Hall, H. G.....	1911	Hamilton, G. M.....	1911
Hall, K.....	1907	Hanes, G. S.....	1903

Hanley, S. C.....	1893	Heron, J. B.....	1904
Hanlon, J. E.....	1915	Hertzberg, C. S. L.....	1905
Hanna, J. J.....	1914	Hertzberg, H. F. H.....	1907
Hanning, G. F.....	1889	Hett, S.....	1906
Hara, L. D.....	1904	Hewson, E. G.....	1908
Harcourt, F. Y.....	1903	Hewson, W. G.....	1905
Hare, R. A.....	1907	Hickling, F. G.....	1910
Hare, R. M.....	1916	Hicks, W. A. B.....	1897
Hare, W. A.....	1899	Higgins, L. T.....	1915
Harkness, A. H.....	1895	Hill, E. M. M.....	1904
Harkness, A. L.....	1906	Hill, S. N.....	1904
Harper, C. J.....	1909	Hill, H. O.....	1907
Harris, C. J.....	1904	Hill, H. R.....	1911
Harris, J. H.....	1910	Hill, T. A.....	1913
Harris, H. C.....	1913	Hillis, C. R.....	1906
Harrison, R. L.....	1906	Hogarth, B. B.....	1914
Harrison, F. W.....	1905	Hogarth, C. E.....	1915
Harrison, E.....	1906	Hogarth, G.....	1909
Harron, L. W.....	1916	Hogg, T. H.....	1907
Hartney, J. C.....	1906	Hoidge, R. T. C.....	1916
Harvey, C.....	1901	Holcroft, H. (deceased).....	1900
Harvey, D. W.....	1909	Holden, O.....	1913
Harvie, N. J. (deceased).....	1910	Holmes, A. E.....	1909
Hastings, C. E.....	1916	Holmes, C. R.....	1909
Hastings, M. B.....	1911	Hookway, C. W.....	1906
Haultain, H. E. T.....	1889	Hoover, O. H.....	1910
Haviland, F. L.....	1908	Hopkins, P. E.....	1910
Hawes, J. H.....	1914	Hopkins, R. H.....	1906
Hawley, H. A.....	1913	Horton, J. A.....	1903
Hay, C. O.....	1909	Hoshal, G. C.....	1909
Hayes, L. J.....	1903	Houston, R. S.....	1906
Hayman, L. T.....	1914	Howard, J. T.....	1913
Hayward, C.....	1915	Howlett, T. F.....	1913
Hearn, R. L.....	1913	Huber, W.....	1906
Heebner, M. B.....	1911	Huether, D. J.....	1908
Heinonen, H. J.....	1913	Huether, A. D.....	1908
Helliwell, J. G. (deceased).....	1910	Huff, A. J.....	1911
Helson, F. I.....	1901	Huffman, K.....	1911
Hemphill, W.....	1900	Hughes, C. (deceased).....	1909
Hemphill, J.....	1909	Hugli, E. E. H.....	1914
Henderson, E. E.....	1885	Hull, H. S.....	1895
Henderson, F. D.....	1903	Hull, A. H.....	1906
Henderson, J. F.....	1910	Hunter, A. E. (deceased).....	1909
Henderson, S. E. M.....	1900	Hunter, A. N.....	1908
Henderson, C. D.....	1908	Hustwitt, S. A.....	1914
Hendry, M. C.....	1905	Hutcheon, J.....	1890
Henry, J. A.....	1900	Hutton, C. H.....	1907
Henry, R. A.....	1913	Hyatt, H.....	1911
Henwood, C.....	1902	Hyland, H. M.....	1907
Herald, W. J.....	1894	Hyman, E. W.....	1907
Hermon, E. B.....	1886		

I

Iler, S. B.....	1908	Ironside, G. A.....	1915
Ingles, C. J.....	1904	Irvine, J.....	1889
Innes, W. L.....	1890	Irwin, H.....	1909
Ireland, L. G.....	1907	Irwin, W. J.....	1910
Ireland, T. P.....	1915	Isbister, J.....	1909
Ireson, E. T.....	1913		

J

Jackes, F. P.....	1909	Johnston, G. W. F.....	1915
Jackson, C. W. H.....	1915	Johnston, H.....	1903
Jackson, J. G.....	1903	Johnston, H. C.....	1910
Jackson, F. C.....	1901	Johnston, A. C.....	1894
Jackson, W.....	1907	Johnston, D. M.....	1902
Jackson, C. B.....	1907	Johnston, H. A.....	1900
Jackson, J. E.....	1909	Johnston, J. C.....	1900
Jackson, K. B.....	1916	Johnston, J. A.....	1900
James, E. W.....	1909	Johnston, C. K.....	1903
James, D. D.....	1889	Johnston, R. H.....	1910
James, E. A.....	1904	Johnston, W. J.....	1909
James, F. L.....	1910	Johnston, C.....	1906
James, O. S.....	1891	Johnston, C. E. (deceased)...	1909
Jamieson, E. A.....	1910	Johnston, J. T.....	1908
Jannati, A. S.....	1914	Jones, C. M.....	1915
Jarvis, R. H.....	1911	Jones, J. E.....	1894
Jefferson, K. A.....	1915	Jones, L. E.....	1911
Jeffrey, D.....	1882	Jones, G. S.....	1905
Jepson, W. C.....	1906	Jones, G. R.....	1906
Jermyn, P. V.....	1904	Jones, T. (deceased).....	1906
Job, H. E.....	1894	Jupp, A. E.....	1906
Johnson, C. C.....	1990	Jupp, E. H.....	1915
Johnson, R. P.....	1914	Junkin, R. L.....	1913
Johnson, S. M.....	1894		

K

Kamman, J. I.....	1914	Killip, W. C.....	1908
Karn, H. C.....	1916	Kilmer, C. E.....	1913
Kay, J.....	1914	King, C. F.....	1897
Kay, E. W.....	1907	King, G. F.....	1916
Keefe, W. S. H.....	1904	King, J. T.....	1910
Keefer, N. G.....	1914	Kinghorn, A. A.....	1907
Keele, J.....	1893	Kingstone, G. A.....	1910
Keffer, A. H. E.....	1909	Kirby, J. R.....	1916
Keith, J. C.....	1910	Kirby, R. W.....	1916
Keith, D. F.....	1907	Kirkland, W. C.....	1884
Keith, H. P.....	1907	Kirkwood, M.....	1911
Kelly, E. A.....	1911	Kirn, R. W.....	1916
Kelly, S. S.....	1913	Kirwan, G. L.....	1910
Kemp, J. B. O.....	1909	Kirwan, P. T.....	1910
Kennedy, J. H.....	1882	Klingner, L. W.....	1907
Kennedy, H. G.....	1908	Klotz, H. N. (deceased).....	1909
Keppy, J. D.....	1906	Knight, R. H.....	1902
Kerby, H. S.....	1914	Knight, J. A.....	1914
Kerr, A. E.....	1913	Knight, S.....	1910
Kerr, J. A.....	1914	Kohl, H.....	1915
Kewin, G. E.....	1914	Kormann, J. S.....	1898
Key, W. R.....	1909	Kribs, G.....	1905
Keys, C. R.....	1915	Krug, S. J.....	1916
Keys, W. R.....	1908		

L

Laidlaw, J. T.....	1893	Laing, W. F. (deceased).....	1896
Laidlaw, R. A.....	1901	Laing, A. T.....	1892
Laidlaw, R. E.....	1915	Laing, J. S.....	1913

Laing, P. A.....	1905	Lee, W. A. (deceased).....	1892
Laird, R.....	1886	Leighton, J. W.....	1905
Lamb, F. C.....	1907	Leitch, J. N. (deceased).....	1910
Lamb, G. J.....	1915	Lennox, A. E.....	1909
Lamont, A. W.....	1909	LePan, A. D.....	1907
Lane, A. (deceased).....	1891	Leslie, A.....	1913
Lang, A. G.....	1903	Leslie, J. N. M.....	1908
Lang, J. L.....	1906	Lewis, F. C.....	1908
Lang, S. A.....	1914	Lieberman, M.....	1911
Langley, C. E.....	1892	Lillie, G. L.....	1911
Langmuir, F. L.....	1902	Lindsay, J. H.....	1907
Langmuir, C. B.....	1909	Lindsay, R. E.....	1914
Lanning, J.....	1911	Linton, A. P.....	1906
Larkworthy, W. J. (deceased).....	1904	Livingston, H. D.....	1913
Laschinger, E. J.....	1892	Lloyd, N. C. A.....	1909
Lash, F. L.....	1893	Lloyd, R. H.....	1915
Lash, N. M.....	1894	Lockhart, W. E.....	1915
Latham, R.....	1899	Long, A. L.....	1911
Latimer, C. W.....	1914	Longstaff, J. C.....	1910
Latornell, A. J.....	1903	Longworthy, W. E.....	1915
Latornell, A.....	1905	Lorimer, N. H.....	1914
Lavrock, J. E.....	1898	Lott, A. E.....	1887
Lawler, E. R.....	1910	Loucks, R. W. E.....	1909
Lawless, N. (deceased).....	1911	Loudon, T. R.....	1905
Lawrence, G. W.....	1915	Lount, C. T.....	1915
Lawson, W. L.....	1892	Lowrie, A. W. P.....	1911
Lawrie, R. R. (deceased).....	1896	Ludgate, B. A.....	1885
Leach, H. O.....	1915	Lumbers, W. C.....	1901
Leaver, C. B.....	1910	Lye, O. G.....	1914
Lee, L. A. C.....	1916	Lye, R. G.....	1915
Lee, R. G.....	1910	Lynar, H. R.....	1908

Mac

Macallum, A. F.....	1893	Mackenzie, A. M.....	1914
MacAndrews, W. M.....	1911	MacKenzie, W. S.....	1911
Macaulay, R. V.....	1911	Mackinnon, J. A.....	1911
MacBain, J. T.....	1911	Mackinnon, J. G.....	1909
MacBeth, C. (deceased).....	1896	Mackinnon, W.....	1906
MacBeth, R. E. A.....	1911	Mackintosh, D.....	1898
Macdonald, A. D.....	1910	Maclachlan, K. S.....	1913
Macdonald, C. A.....	1915	Maclachlan, W.....	1906
Macdonald, J. B.....	1910	MacLachlan, W. A.....	1909
Macdonald, J. A.....	1910	MacLaurin, J. G.....	1911
Macdonald, G. A.....	1910	Maclean, B. A.....	1909
Macdonald, F. M.....	1911	MacLennan, G. G.....	1910
Macdonald, R. A.....	1916	MacLeod, G.....	1907
Macdonald, W. A.....	1914	MacLeod, D. D. (deceased).....	1910
Macdonell, I. M.....	1915	MacMillan, G.....	1901
Macdougall, A. C.....	1901	MacMurchy, J. A.....	1896
Macfarlane, E. D.....	1909	MacMurchy, H. G.....	1910
MacGregor, A. E.....	1910	Macpherson, H. E.....	1915
MacKay, A. G.....	1907	Macpherson, N. W.....	1909
MacKay, J. T.....	1902	MacPherson, A. R.....	1913
MacKay, E. G.....	1910	Macpherson, H. N.....	1914
MacKenzie, H. R.....	1913	MacQuarrie, A. H.....	1914
MacKenzie, K. A.....	1906	MacTavish, H. J.....	1910
MacKenzie, H. J.....	1914	MacTavish, W. H.....	1913

Mc

McAllister, J. E.....	1891	McGregor, W. W. (deceased)..	1905
McAllister, A. L.....	1893	McGregor, J. M.....	1908
McAlpine, D. D.....	1909	McGugan, D. F.....	1915
McAndrew, J. B.....	1911	McGugan, D. J.....	1907
McAree, J. (deceased).....	1882	McIlwraith, D. G.....	1906
McArthur, R. E.....	1900	McIntosh, A. H.....	1907
McArthur, A. S.....	1909	McIntosh, W. G.....	1909
McAuslan, H. J.....	1903	McIntyre, J. S.....	1915
McBride, A. H.....	1902	McKague, E. V.....	1915
McBride, T. C.....	1910	McKay, O.....	1885
McCaffrey, W. R.....	1915	McKay, C. (deceased).....	1904
McCarthy, T. V.....	1913	McKay, W. N.....	1895
McCollum, C. R.....	1909	McKechnie, F. H.....	1909
McConnell, A. W.....	1906	McKenzie, D. A.....	1911
McConnell, R. S.....	1913	McKenzie, D. W.....	1905
McCordick, A. S.....	1909	McKenzie, J. A.....	1906
McCort, C. R.....	1915	McKim, L. R.....	1910
McCrodan, B. A.....	1916	McKinnon, H. L.....	1895
McCuaig, O. B.....	1904	McKnight, J. H.....	1909
McCuaig, P. J.....	1909	McLaren, A. J.....	1911
McCulloch, A. L.....	1887	McLaren, D. L.....	1914
McCurdy, J. A. D.....	1907	McLean, C. A.....	1905
McDonald, K. D.....	1915	McLean, W. N.....	1905
McDonald, J. P.....	1915	McLean, L. A. (deceased)....	1908
McDonald, R. C.....	1914	McLeish, A. G.....	1911
McDougall, J. (deceased).....	1884	McLellan, R. A.....	1911
McDougall, S. G.....	1910	McLennan, A. L.....	1902
McDowall, R.....	1888	McLeod, G.....	1909
McEachren, J. A.....	1911	McMaster, A. T. C.....	1901
McElhanney, T. A.....	1910	McMaster, W. A. A.....	1908
McElroy, R. W.....	1911	McMillan, J. G.....	1900
McEntee, B.....	1892	McMillan, D.....	1904
McEwen, G. G.....	1904	McMillan, V.....	1909
McEwen, H. J.....	1911	McMordie, H. C.....	1908
McFarlane, J. A.....	1903	McNab, J. V.....	1906
McFarlane, W. G.....	1904	McNaughton, A. L.....	1903
McFarlane, J. B.....	1907	McNaughton, F. W.....	1898
McFarlen, G. W.....	1888	McNeill, F. W.....	1907
McFarlen, T. J.....	1893	McNiven, J.....	1910
McFaul, W. L.....	1913	McPherson, A. J.....	1893
McGarry, P. J.....	1910	McPherson, J. A.....	1906
McGeorge, W. G.....	1908	McPherson, W. B.....	1911
McGhie, W. G.....	1911	McQuarrie, M. K.....	1907
McGibbon, C. P.....	1904	McQueen, A. A.....	1911
McGie, W. R.....	1915	McRoberts, A. A.....	1908
McGill, S. B.....	1914	McSloy, J. I.....	1910
McGorman, S. E.....	1906	McTaggart, A. L.....	1894
McGowan, J.....	1895	McVean, H. G.....	1901

M

Mace, F. G.....	1905	Maisonville, A. W. R.....	1910
Madden, J. F. S.....	1902	Malcolm, A. L.....	1909
Madge, N. G.....	1908	Malcolmson, W. S.....	1907
Madill, H. H.....	1911	Malone, J. E.....	1908
Main, W. T.....	1893	Manning, N. H.....	1909

Manson, G. J.....	1904	Mills, P. H.....	1914
Manson, A. B.....	1909	Mills, L. G.	1911
Marani, C. J.....	1888	Milne, C. G. (deceased).....	1892
Marani, V. G.....	1893	Mines, W.....	1893
Margison, O.....	1916	Minns, J. B.....	1907
Marlatt, K. D.....	1908	Minty, W.....	1894
Marr, N.....	1910	Mitchell, A. B.....	1908
Marriott, F. G.....	1903	Mitchell, G.....	1915
Marrs, C. H.....	1902	Mitchell, J. S.....	1914
Marrs, D. W.....	1906	Mitchell, P. H.....	1903
Marshall, J. A.....	1914	Mitchell, L. C.....	1911
Marshall, J. A. P.....	1914	Mitchell, C. H.....	1892
Marshall, R. J.....	1908	Mitchell, B. F.....	1906
Marshall, S. A.....	1907	Mitchell, W. B.....	1916
Martin, E. T.....	1915	Moberley, H. K.....	1889
Martin, F.....	1887	Moffatt, R. W.....	1905
Martin, J. C.....	1911	Mogan, J. T.....	1915
Martin, W. H.....	1910	Molesworth, G. N.....	1907
Martin, T.....	1896	Molesworth, J. C. P. (de- ceased).....	1908
Martindale, E. S.....	1909	Monds, W.....	1899
Martyn, O. W.....	1909	Monk, E. D.....	1908
Mason, D. H. C.....	1907	Montague, J. R.....	1914
Matheson, W. C.....	1901	Montague, F. F.....	1906
Mathison, P.....	1901	Monteith, E. M.....	1915
Matthews, R. G.....	1914	Montgomery, R. H.....	1903
Matthews, A. C.....	1910	Moody, F. H.....	1908
Maus, C. A.....	1903	Moore, H. H.....	1902
Maxwell, H. W.....	1914	Moore, E. E.....	1904
Maxwell, W. A.....	1906	Moore, J. H.....	1888
Maynard, H. V.....	1907	Moore, J. E. A.....	1891
Meadar, C. H.....	1910	Moore, F. A.....	1903
Meadows, C. A.....	1911	Moore, W. J.....	1906
Meadows, W. W.....	1895	Moore, J. M.....	1907
Mechin, F. C.....	1914	Moorhouse, W. N.....	1904
Meitz, W. H.....	1915	Morden, L. W.....	1905
Melson, J. W.....	1907	Morgan, J. P.....	1910
Mennie, R. S.....	1902	Morice, J. H.....	1908
Menzies, J. M.....	1906	Morley, P. F.....	1907
Merrill, E. B.....	1891	Morphy, J. A.....	1911
Merriman, H. O.....	1910	Morris, A.....	1915
Middleton, H. T.....	1901	Morris, B. M. (deceased).....	1915
Mickle, G. R.....	1888	Morris, J. L.....	1881
Mickleborough, K. F.....	1913	Morris, C. A.....	1909
Mickler, G. J.....	1913	Morris, W. D.....	1915
Mill, F. X. (deceased).....	1889	Morrison, D.....	1914
Millar, W. G.....	1914	Morton, G.....	1909
Miller, D. J.....	1910	Mowbray, F. E. H.....	1908
Miller, A. S.....	1914	Muir, J. M.....	1915
Miller, L. Haun.....	1900	Mullins, E. E.....	1903
Miller, M. L.....	1903	Mullins, G. J.....	1914
Miller, L. R.....	1906	Mulqueen, F. J.....	1913
Milligan, G. L.....	1908	Munro, A. H.....	1910
Milligan, F. S.....	1910	Munro, W. H.....	1904
Milligan, W. E.....	1914	Munro, G. R.....	1905
Millman, N. C.....	1913	Munro, F. V.....	1909
Mills, G. G.....	1907	Muntz, E. P.....	1914
Mills, P. E.....	1910		

Murdie, W. C.....	1913	Murray, J. D.....	1907
Murdock, C. R.....	1906	Murray, W. P.....	1908
Murphy, C. J.....	1906	Murton, J. C.....	1911
Murphy, M. H.....	1911	Mutch, D. A. S.....	1913
Murray, E. W.....	1907		

N

Nash, J. C.....	1901	Newton, W. E.....	1910
Nash, T. S.....	1902	Ney, C. H.....	1916
Near, W. P.....	1906	Nichol, F. T.....	1910
Neelands, E. V.....	1900	Nicholson, C. J.....	1894
Neelands, E. W.....	1907	Nicholson, C. L.....	1914
Neelands, R. E. K.....	1907	Nicholson, J. B.....	1914
Neelands, R.....	1906	Nicklin, H. S.....	1915
Neilly, B.....	1907	Nicklin, W. G.....	1905
Neilson, M. A.....	1915	Niebel, E. H.....	1911
Neville, E. A.....	1909	Nixon, C. K.....	1911
Nevitt, I. H.....	1903	Noble, E. S.....	1911
Newcome, J. C.....	1916	Noecker, C.....	1914
Newhall, V. A.....	1910	Northey, R. K.....	1911
Newman, W.....	1891	Nott, G. E.....	1916
Newton, J.....	1909	Nourse, A. E.....	1907
Newton, K. L.....	1913		

O

O'Brien, E. D.....	1905	Oliver, C. E.....	1916
O'Callaghan, E. A.....	1916	Oliver, E. W.....	1903
O'Connor, E. B.....	1915	Oliver, J. P.....	1903
Odell, L. S.....	1909	Omand, W. M.....	1915
O'Donnell, V. J.....	1909	O'Neil, C. M.....	1910
O'Flynn, W. A.....	1911	Orr, J. A.....	1911
O'Grady, W. deC.....	1908	O'Sullivan, J. J.....	1907
O'Hearn, J. J.....	1909	Otto, C. J.....	1913
Oke, W. V.....	1911	Owens, J. A.....	1914

P

Pace, J. D.....	1903	Payne, A. N.....	1915
Pace, G.....	1904	Peaker, W. J.....	1904
Pae, A. W.....	1909	Pearce, K. K.....	1910
Palmer, C. E.....	1910	Pearce, L. P.....	1915
Pardoe, W. S.....	1904	Pearson, C. L.....	1911
Paris, J.....	1904	Peart, J. D.....	1914
Park, D. G.....	1906	Peart, J. W.....	1913
Parke, J.....	1904	Peck, H. M.....	1915
Parker, A. H.....	1914	Peckover, H. J.....	1908
Parker, G. C.....	1910	Pedder, J. R. (deceased).....	1890
Parker, J. S.....	1911	Pennington, C. W.....	1914
Parkin, J. H.....	1911	Pepler, S. J. (deceased).....	1911
Parkinson, N. F.....	1913	Pequegnat, M.....	1908
Parsons, J. L. R.....	1901	Perrin, W. J.....	1911
Paterson, G. W.....	1906	Perron, E.....	1913
Paton, T. K.....	1907	Perry, C. V.....	1914
Patten, B. B.....	1903, 1905	Peterkin, S. M.....	1915
Patterson, J.....	1899	Petry, A. M.....	1909
Patterson, R. G.....	1914	Pettingill, R. E.....	1906
Patton, J. McD.....	1911	Phillips, E. H.....	1900
Paul, R. A.....	1915	Phillips, H. G.....	1908
Paulin, F. W.....	1907	Phillips, C. H.....	1910

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Phillips, E. P. A.....	1905	Powell, G. G.....	1902
Phillips, W. E.....	1914	Powell, N. L.....	1916
Philp, D. H.....	1903	Powell, W. D.....	1915
Philp, G. O.....	1914	Power, G. H.....	1901
Pick, B. W.....	1911	Pratt, F. M.....	1911
Pickering, A. E.....	1904	Prentice, J. M. (deceased)....	1892
Pigott, R. B.....	1909	Price, H. W.....	1901
Pinhey, C. H.....	1887	Pringle, J. E.....	1916
Pinkney, D. H.....	1903	Prochnow, F. E.....	1907
Pivnick, M.....	1908	Proctor, A. I.....	1909
Playfair, N. L.....	1892	Proctor, E. M.....	1908
Plunkett, T. H.....	1903	Procunier, J. F.....	1907
Ponton, G. M.....	1909	Proudfoot, H. W. (deceased)...	1897
Pope, A. S. H.....	1899	Publow, C. F.....	1908
Porte, E. H.....	1911	Pullan, H.....	1911
Porte, W. B.....	1906	Pullen, E. F.....	1905
Porter, C. F.....	1915	Purdy, W. F. P.....	1915
Porter, C. J.....	1909	Purser, R. C.....	1906
Porter, J. E.....	1915	Pye, D. E.....	1910
Potter, R. B.....	1907		

Q

Quail, H. C.....	1913	Quance, G. E.....	1907
Quail, J.....	1909	Quinlan, L. J.....	1911

R

Railton, L. W.....	1911	Richardson, C. E.....	1910
Raine, H.....	1907	Richardson, C. W. B.....	1907
Raley, W. E. (deceased)....	1915	Richardson, F. L.....	1908
Ramsay, W. S.....	1910	Richardson, G. H.....	1888
Ramsey, G. L.....	1905	Richardson, W. A.....	1911
Ramsperger, A. F.....	1909	Richmond, J.....	1916
Rance, C. C.....	1915	Ricker, H. A.....	1908
Raney, P. H.....	1914	Riddell, J. M.....	1913
Rankin, G.....	1915	Riddell, M. R.....	1904
Rannie, J. L.....	1907	Ridler, A. A.....	1907
Ransom, J. T.....	1908	Ritchie, H. C.....	1910
Ratz, E. G.....	1913	Ritchie, J. E.....	1913
Ratz, J. E.....	1911	Roaf, J. R.....	1900
Ratz, W. F. (deceased)....	1902	Robertson, A. S.....	1914
Raymer, A. R.....	1884	Robertson, A. S.....	1915
Raymond, D. C.....	1904	Robertson, C. S.....	1913
Rayner, G. W.....	1905	Robertson, F. A.....	1908
Read, F. N.....	1911	Robertson, H. D.....	1902
Redfern, B. J.....	1910	Robertson, J.....	1884
Redfern, W. B.....	1908	Robertson, J. M.....	1914
Redfern, C. R.....	1909	Robertson, J. M.....	1893
Redman, W. B.....	1915	Robertson, N. R.....	1906
Reid, E. V.....	1911	Robertson, A. R.....	1908
Reid, F. B.....	1904	Robertson, D. F.....	1903
Reid, F. G.....	1915	Robinson, J. (deceased)....	1891
Relyea, P. J.....	1915	Robinson, F. J.....	1895
Revell, G. E. (deceased)....	1899	Robinson, A. H. A.....	1897
Rice, R. H.....	1914	Robinson, L. H.....	1904
Richards, E.....	1899	Robinson, W. A.....	1908
Richardson, A. A.....	1915	Robinson, R. C.....	1908

Robinson, W. E.....	1911	Rothery, L. W.....	1911
Roblin, H. L.....	1911	Rothwell, T. E.....	1905
Roddick, J. O.....	1906	Rothwell, H. E.....	1907
Rogers, J.....	1887	Rothwell, H. D.....	1914
Rogers, C. H.....	1906	Rounthwaite, C. H. E.....	1900
Rogers, L. J.....	1908	Rous, C. C.....	1913
Rolfson, O.....	1906	Routly, H. T.....	1906
Rolph, H.....	1894	Rowe, H. M.....	1915
Rose, H. C.....	1916	Rowe, T. L. F.....	1911
Rose, J. T.....	1915	Roxburgh, G. S.....	1904
Rose, K.....	1888	Rubidge, W. F. B.....	1910
Rose, R. R.....	1908	Runciman, A. S.....	1911
Rosebrugh, T. R.....	1888	Russel, W. B.....	1891
Ross, A. C.....	1915	Russel, R.....	1893
Ross, J. A.....	1892	Russell, C. H.....	1913
Ross, J. E.....	1888	Russell, J. P.....	1916
Ross, D.....	1908	Rust, H. P.....	1901
Ross, R. A.....	1890	Rutherford, F. N.....	1904
Ross, K. G.....	1906	Rutherford, F. S.....	1914
Ross, R. B. (deceased).....	1905	Rutledge, L. T.....	1909
Ross, R. C.....	1906	Rutley, F. G.....	1911
Ross, S. R.....	1916	Rutter, G. W.....	1915
Ross, S. W.....	1916	Ryckman, J. H.....	1906
Ross, O. W.....	1910		

S

Salter, E. M.....	1911	Servos, F. M.....	1914
Sanders, W. K.....	1906	Sewell, L.....	1913
Sanderson, A. U.....	1909	Seymour, H. L.....	1903
Sara, R. A.....	1909	Seymour, N. F.....	1915
Sauder, P. M.....	1904	Shanks, T.....	1899
Sauer, M. V.....	1901	Sharp, M. C.....	1913
Saunders, G. A.....	1899	Sharpe, N.....	1911
Saunders, H. W.....	1900	Shaw, J. H.....	1898
Savage, E. W.....	1915	Shaw, J. H.....	1915
Scandrett, F. R.....	1911	Shaw, K. E.....	1913
Scarlett, A. A.....	1913	Shaw, W. E. V.....	1908
Scheibe, R. R.....	1896	Shaw, M. R.....	1909
Scheibe, H. M.....	1903	Shaw, W. C.....	1910
Schofield, C. A.....	1907	Sheard, P.....	1911
Schwenger, C. E.....	1909	Shearer, H. F.....	1908
Scott, A. G.....	1915	Sheehy, J. S.....	1915
Scott, C. A.....	1909	Sheply, J. D.....	1904
Scott, E. H.....	1915	Sheppard, A. C. T.....	1907
Scott, G. S.....	1905	Sheppard, H. L.....	1914
Scott, J. W.....	1911	Sheppard, N. E. D.....	1914
Scott, R. G.....	1915	Sherman, N. C.....	1910
Scott, W. A.....	1906	Shields, J. D.....	1894
Scott, W. B.....	1916	Shier, W. G. (deceased).....	1915
Scott, W. F.....	1897	Shipley, A. E.....	1898
Seaborne, R. L.....	1916	Shirriff, C. H.....	1905
Seaton, N. D.....	1911	Shupe, S.....	1914
Secord, A. O.....	1908	Sibbett, W. A.....	1911
Sedgwick, A.....	1909	Sievewright, R. L.....	1916
Segre, B. H.....	1909	Sills, C. P.....	1911
Seibert, F. V.....	1909	Silvester, G. E.....	1891
Serson, H. V.....	1905	Sime, A. W.....	1914

Simpson, B. N.....	1914	Steele, I. J.....	1902
Simpson, C. N.....	1915	Steele, A. L.....	1910
Sims, F. R.....	1913	Steele, W. S.....	1911
Sinclair, D. (deceased).....	1902	Stern, E. W.....	1884
Sinclair, D. G.....	1913	Steven, H. M.....	1910
Sinclair, C. E.....	1914	Stevenson, W. H.....	1901
Sinclair, R. B.....	1915	Stewart, A. E.....	1911
Sisson, C. E.....	1905	Stewart, J. A.....	1898
Skaith, J. B.....	1914	Stewart, D. L. N.....	1905
Skinner, J. L.....	1916	Stewart, M. A.....	1905
Skinner, W. C.....	1914	Stewart, R. B.....	1909
Slater, F. W.....	1904	Stewart, R. O.....	1911
Smallpiece, F. C.....	1898	Stewart, W. M.....	1906
Smart, R. S.....	1904	Stewart, G. S.....	1907
Smelser, W. A.....	1916	Stewart, A. W. J.....	1908
Smiley, R. W.....	1897	Stewart, N. C.....	1909
Smith, A. N.....	1892	Stiles, J. A.....	1907
Smith, A.....	1894	Stitt, J. B.....	1915
Smith, H. G. (deceased).....	1903	Stiver, J. L.....	1907
Smith, H. M. (deceased).....	1914	St. Lawrence, J.....	1908
Smith, R. W.....	1898	Stock, J. J.....	1908
Smith, J. H.....	1903	Stock, P. H.....	1909
Smith, D. A.....	1904	Stocking, F. T.....	1895
Smith, K. H.....	1911	Stone, J. D.....	1915
Smith, M. L.....	1911	Stone, L. I.....	1910
Smith, W. C.....	1910	Stoneman, E. C. R.....	1914
Smith, G. E.....	1910	Storey, G. C.....	1915
Smith, F. L.....	1910	Story, R. A.....	1911
Smith, F. R.....	1907	Strathy, J. M. (deceased).....	1913
Smither, W. J.....	1904	Street, J. C.....	1909
Smithrim, E. R.....	1907	Strome, I. R.....	1914
Smyth, A. H.....	1915	Stroud, J. E. C.....	1915
Smyth, G. M.....	1914	Stroud, S.....	1909
Snaith, W.....	1907	Stuart, H. B.....	1908
Sneath, R. G.....	1911	Stuart, J. L. G.....	1907-1908
Somers, N. L.....	1914	Stubbs, W. F.....	1905
Soper, R. W.....	1913	Stull, W. W.....	1897
Sparling, M. W.....	1909	Sturdy, N. H.....	1905
Speller, F. N.....	1893	Suhler, A. N.....	1915
Spellman, W. A.....	1913	Summers, G. F.....	1907
Spence, J. J.....	1909	Sureda, J. A.....	1916
Spencer, A. C.....	1907	Sutcliffe, H. W.....	1907
Spotton, A. K.....	1894	Sutherland, A. L.....	1910
Spry, R. J.....	1910	Sutherland, D.....	1913
Squire, G. E.....	1911	Sutherland, W. H.....	1902
Squire, R. H. (deceased).....	1893	Sutherland, C. C.....	1909
Stamford, W. L.....	1908	Swan, W. G.....	1905
Standing, R. O.....	1914	Swan, R. G.....	1909
Stark, W. H.....	1916	Sword, A. D.....	1908-1909
Starr, R. H.....	1908	Sykes, F. H.....	1905
Stayner, D. S.....	1909	Symmes, H. D.....	1891
Steel, W. A.....	1915	Szammers, C. F.....	1911

T

Tackaberry, S. G.....	1914	Taylor, A.....	1900
Tasker, R.....	1913	Taylor, A. N.....	1915
Tate, H. W.....	1909	Taylor, J. W. R.....	1908

Taylor, J. S. (deceased).....	1914	Thorold, F. W.....	1900
Taylor, R.....	1911	Tillson, L. B.....	1915
Taylor, T.....	1902	Tillson, E. D.....	1905
Taylor, W. E.....	1908	Tilston, J. A.....	1914
Taylor, W. V.....	1893	Tipper, G. A.....	1909
Teasdale, C. M.....	1902	Titus, C. G.....	1910
Temes, C. N.....	1914	Tom, J. A.....	1915
Temple, J. B.....	1911	Toms, C. G.....	1908
Tennant, D. C.....	1899	Torrance, R. D.....	1911
Tennant, W. C. (deceased)....	1900	Torrance, T. E.....	1913
Tennent, E. H.....	1914	Tough, W. G.....	1911
Ternan, E. A.....	1910	Townsend, C. J.....	1904
Thom, W. H.....	1910	Townsend, D. T.....	1904
Thomas, G. C.....	1911	Traill, J. J.....	1905
Thomas, V. C.....	1908	Treadgold, W. M.....	1905
Thompson, J. M.....	1913	Trees, S. L.....	1903
Thompson, P. M.....	1907	Trees, A. G.....	1909
Thompson, E. A.....	1909	Treloar, G. E.....	1914
Thompson, H. B.....	1910	Tremaine, R. C. C. (deceased)	1895
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Thompson, W. K.....	1913	Trimble, A. V.....	1904
Thomson, D. J.....	1913	Trow, R. M.....	1913
Thomson, T. K.....	1886	Tucker, B. B.....	1904
Thomson, R. W.....	1892	Tull, W. S.....	1914
Thomson, S. E.....	1904	Turnbull, W. G.....	1909
Thomson, L. R.....	1905-1907	Turner, W. E.....	1905
Thomson, J. E.....	1906	Twidale, E. A.....	1914
Thomson, O. R.....	1907	Tye, H. W.....	1908
Thorne, S. M.....	1900	Tyrrell, J. W.....	1883
Thornley, J. H.....	1908	Tyrrell, H. G.....	1886

U

Uffelman, W.....	1915	Ure, W. G.....	1913
Umbach, J. E.....	1903	Uren, A. E.....	1905
Underwood, J. E.....	1909		

V

Van Allen, K. M. (deceased)...	1910	Venney, L. T.....	1910
VanDyke, F. T.....	1914	Vercoe, H. L.....	1898
VanEvery, W. W.....	1899	Verity, M. F.....	1914
VanNorman, C. P.....	1908-1909	Vickers, N.....	1911
VanNostrand, J.....	1909	Vickery, C. L. (deceased)....	1906
Vatcher, A.....	1909	Villeneuve, T. L.....	1908
Vaughan, J. M.....	1905	Von Gunten, C. F.....	1913

W

Waddell, H. O.....	1914	Walker, J. A.....	1908
Wade, E.....	1904	Walker, C. M.....	1909
Wagner, H. W.....	1914	Wallace, G. L.....	1911
Wagner, N.....	1910	Wallace, H. D. M.....	1914
Wagner, W. E.....	1899	Walton, T. (deceased).....	1910
Wagner, H. L.....	1905	Wanless, A. A.....	1902
Waite, J. H. C.....	1911	Ward, A. L.....	1915
Walcott, W. D.....	1911	Ward, F. W.....	1916
Waldron, J.....	1903	Ward, R. C.....	1916
Walker, E. W. (deceased)....	1904	Wardell, A.....	1911
Walker, R. M.....	1910	Warrington, G. A.....	1910
Walker, W. J.....	1907	Wass, S. B.....	1903

Watson, F. E.	1911	Wilkinson, R. G.	1909
Watson, M. B.	1910	Williams, C. G.	1903
Watson, R. B.	1893	Williams, E. R.	1911
Watson, J. P.	1904	Williams, J. A. McK.	1909
Watt, G. H.	1899	Williams, J. N.	1915
Watts, R. E. (deceased)	1913	Williams, G. K. (deceased) ...	1910
Waugh, B.	1908	Williamson, O. T. G.	1909
Webb, C. E.	1909	Williamson, D. A.	1898
Webb, E. E.	1909	Wilson, A. C.	1914
Webster, C. A.	1913	Wilson, A. F.	1907
Webster, H.	1913	Wilson, F. D.	1908
Wedlake, R. M.	1908	Wilson, F. F.	1909
Weeks, M. B.	1897	Wilson, H. A.	1911
Weir, D. H.	1913	Wilson, H. P.	1914
Weir, F. E.	1915	Wilson, J. C.	1915
Weir, H. M.	1900	Wilson, J. N.	1906
Weir, J. M.	1904	Wilson, J. M.	1908
Weir, R. P.	1908	Wilson, L. R.	1909
Weldon, E. A.	1897	Wilson, N. D.	1903
Welford, P. G.	1911	Wilson, R. D.	1901
Wells, A. F.	1904	Wilson, W. H.	1910
Wells, A. R.	1916	Wing, D. O.	1908
Weppler, H. S.	1916	Winters, W. S.	1913
West, A. M.	1908	Withrow, W. J.	1890
West, C. W.	1915	Withrow, F. D.	1900
Wheler, A. G.	1911	Wood, C. S.	1911
Whelihan, J. A.	1903	Wood, E. M.	1906
White, A. V.	1892	Wood, H. A.	1915
White, H. F.	1903	Wood, R. F. B.	1913
White, W. R.	1908	Woodley, G. E. (deceased) ...	1910
White, W. J.	1908	Woods, M. H.	1907
White, F. C.	1909	Wookey, S. A.	1909
White, H. M.	1910	Worden, W. G.	1911
Whitelaw, A. R.	1909	Workman, G. R.	1910
Whitley, P. L.	1914	Worthington, W. R.	1904
Whitside, J. L. (deceased) ...	1910	Wright, A. J.	1913
Wickens, W. S.	1910	Wright, C. H. C.	1888
Wickett, T.	1889	Wright, G. W. A.	1907
Wickett, W. E. (deceased) ...	1906	Wright, L. A.	1910
Widdicombe, A. E.	1916	Wright, R. T.	1894
Wiggins, T. H.	1890	Wright, W. F.	1904
Wigle, A. E.	1914	Wright, W. J. T.	1911
Wigle, J. A. H.	1914	Wrong, F. H.	1911
Wilkes, E. D.	1907	Wylie, W. H.	1911
Wilkes, G. H.	1911	Wyman, H. K.	1911-1915
Wilkinson, T. A.	1898		

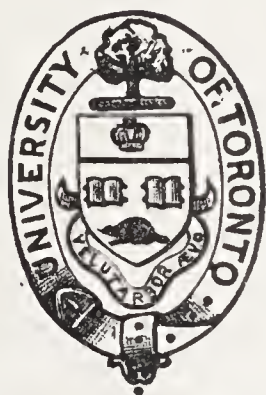
Y

Yeates, E.	1899	Young, R.	1908
Yorke, L. P.	1911	Young, R. B.	1913
Youell, A. W.	1910	Young, R. W.	1914
Young, A.	1911	Young, S.	1911
Young, C. R.	1903	Young, W. S.	1910
Young, J.	1907	Young, W. H.	1905

Z

Zahn, H. J.	1902	Zinkan, W. E.	1911
Zimmer, A. R.	1907		

THE
CALENDAR
OF THE
University of Toronto



FACULTY OF
APPLIED SCIENCE AND ENGINEERING
1918-1919

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CALENDAR 1918-1919.

- 1918—Sept. 1 Applications for Registration received.
Last day for receiving applications for Supplemental Examinations.
- Oct. 1 Supplemental Examinations begin.
Meeting of Faculty Council.
Enrolment.
First Term begins.
Last day for receiving Vacation Work.
President's address to students at 3 p.m.
- Oct. 4 Meeting of Faculty Council.
16 Meeting of Engineering Society.
30 Meeting of Engineering Society.
- Nov. 1 Meeting of Faculty Council.
13 Meeting of Engineering Society.
27 Meeting of Engineering Society.
- Dec. 6 Meeting of Faculty Council.
11 Meeting of Engineering Society.
20 First Term ends at 12 noon.
- 1919—Jan. 7 Second Term begins.
Last day for receiving Theses for B.A.Sc.
10 Meeting of Faculty Council.
15 Meeting of Engineering Society.
29 Meeting of Engineering Society.
- Feb. 7 Meeting of Faculty Council.
12 Meeting of Engineering Society.
26 Meeting of Engineering Society.
- Mar. 7 Meeting of Faculty Council.
12 Meeting of Engineering Society.
14 Annual elections of Engineering Society.
18 Good Friday—Building closed.
26 Annual Meeting of Engineering Society.
- April 4 Meeting of Faculty Council.
Lectures and practical work close.
8 Annual Examinations begin.
- May 2 Meeting of Faculty Council.
- June 6 Annual Commencement.

The buildings will be closed on all public holidays and daily at noon during July and August.

University of Toronto.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

President.....R. A. FALCONER, LL.D., D.Litt., C.M.G.
Dean of Faculty.....W. HODGSON ELLIS, M.A., M.B.
Secretary of Faculty.....A. T. LAING, B.A.Sc.
Bursar.....F. A. MOURÉ, Esq.

G. R. ANDERSON, M.A. <i>Associate Professor of Physics.</i>	70 Isabella Street.
R. W. ANGUS, B.A.Sc., Mem. Am. Soc. M.E. <i>Professor of Mechanical Engineering.</i>	42 Howland Ave.
E. G. R. ARDAGH, B.A.Sc., <i>Assistant Professor of Analytical Chemistry.</i>	Chem. & Mining Bldg.
L. M. ARKLEY, M.Sc., M.E.I.C. <i>Assistant Professor in Mechanical Engineering.</i>	61 Indian Rd. Crescent
J. W. BAIN, B.A.Sc., <i>Professor of Chemical Engineering.</i>	393 Brunswick Ave. (On war service.)
M. C. BOSWELL, M.A., Ph.D., <i>Associate Professor of Organic Chemistry.</i>	University of Toronto.
J. R. COCKBURN, B.A.Sc., A.M.E.I.C. <i>Assistant Professor of Descriptive Geometry</i>	100 Walmer Rd. (On active service)
S. R. CRERAR, B.A.Sc., D.L.S., <i>Lecturer in Surveying.</i>	122 Grenadier Rd.
W. HODGSON ELLIS, M.A., M.B., <i>Professor of Applied Chemistry.</i>	86 Woodlawn Ave., E.
P. GILLESPIE, M.Sc., C.E., M.E.I.C., <i>Associate Professor of Applied Mechanics.</i>	358 Davenport Rd.
G. A. GUESS, M.A., <i>Professor of Metallurgy.</i>	Oakville.
H. E. T. HAULTAIN, C.E., M.I.M.M., <i>Professor of Mining Engineering.</i>	50 St. George St.
A. T. LAING, B.A.Sc., <i>Assistant Professor of Applied Mechanics.</i>	146 Balmoral Ave.
T. R. LOUDON, B.A.Sc., <i>Assistant Professor of Ferro-Metallurgy.</i>	189 Sheldrake Blvd. (On active service)
A. WELLESLEY MCCONNELL, B.A.Sc., <i>Assistant Professor of Architecture.</i>	36 Prince Arthur Avenue (On active service)
J. MCGOWAN, B.A., B.A.Sc., <i>Professor of Applied Mechanics.</i>	Engineering Building.

H. W. PRICE, B.A.Sc., <i>Associate Professor of Electrical Engineering.</i>	474 Palmerston Ave.
T. R. ROSEBRUGH, M.A., <i>Professor of Electrical Engineering.</i>	92 Walmer Rd.
L. B. STEWART, O.L.S., D.T.S., <i>Professor of Surveying & Geodesy.</i>	161 Admiral Rd.
J. J. TRAILL, B.A.Sc., <i>Lecturer in Hydraulics.</i>	15 Fulton Ave.
W. M. TREADGOLD, B.A., <i>Assistant Professor of Surveying.</i>	13 Woodlawn Ave. E.
C. H. C. WRIGHT, B.A.Sc., Mem. O.A.A., <i>Professor of Architecture.</i>	419 Markham St.
C. R. YOUNG, B.A.Sc., C.E., M.E.I.C. <i>Assistant Professor of Structural Engineering.</i>	98 Hilton Ave. (On active service.)

Sessional Appointments.

J. L. BANKS, <i>Instructor in Modelling.</i>	176 Kingston Rd.
E. W. BANTING, B.A.Sc., <i>Lecturer in Surveying.</i>	101 Farnham Ave.
J. H. BILLINGS, B.A.Sc., S.M., <i>Lecturer in Machine Design.</i>	Weston, Ont.
W. G. BIRRELL, B.A.Sc. <i>Demonstrator in Electrochemistry.</i>	64 St. Mary Street.
J. T. BURT-GERRANS, M.A., Phm.B., <i>Lecturer in Electrochemistry.</i>	46 Dewson St.
A. R. CLUTE, B.A., LL.B., <i>Lecturer on Law of Partnership and Limited Companies.</i>	47 Elgin Ave.
F. C. DYER, B.A.Sc., <i>Lecturer in Mining Engineering.</i>	241 Melita Ave.
W. S. FERGUSON, C.A., <i>Lecturer in Accountancy.</i>	52 Tranby Ave.
W. S. GUEST, B.A.Sc., <i>Lecturer in Electrical Engineering.</i>	30 McMaster Ave.
C. W. JEFFERYS, A.R.C.A., Mem. O.S.A., <i>Instructor in Freehand Drawing.</i>	York Mills
J. T. KING, B.A.Sc., <i>Lecturer in Mining Engineering.</i>	87 Pine Crest Rd.
MISS J. C. LAING, B.A., <i>Instructor in French.</i>	16 Appleton Ave
H. M. LANCASTER, B.A.Sc., <i>Lecturer in Sanitary Chemistry.</i>	22 Palmerston Gardens

J. M. LYLE, <i>Instructor in Architectural Design.</i>	19 Avondale Rd.
O. MARGISON, B.A.Sc., <i>Demonstrator in Drawing.</i>	62 College St.
A. S. MATHERS, B.A.Sc. <i>Instructor in Architecture.</i>	70 Grenville Street.
J. H. PARKIN, B.A.Sc., <i>Lecturer in Mechanical Engineering.</i>	10 Columbine Ave.
L. J. ROGERS, B.A.Sc., <i>Lecturer in Applied Chemistry.</i>	29 Rosemount Ave.
W. J. SMITHER, B.A.Sc., A.M.E.I.C., <i>Lecturer in Structural Engineering.</i>	Pensax Court
G. L. WALLACE, B A.Sc., <i>Demonstrator in Physics.</i>	237 High Park Ave.
F. E. WATSON, B.A.Sc., <i>Demonstrator in Drawing.</i>	447 Manning Ave.
A. R. ZIMMER, B.A.Sc., <i>Lecturer in Electrical Engineering.</i>	80 Pine Crest Road

**MEMBERS OF OTHER FACULTIES GIVING INSTRUCTION TO
STUDENTS IN APPLIED SCIENCE.**

F. B. ALLAN, M.A., Ph.D., <i>Associate Professor of Organic Chemistry.</i>	380 Brunswick Ave.
ALFRED BAKER, M.A., <i>Professor of Mathematics.</i>	81 Madison Ave.
B. A. BENSLEY, B.A., Ph.D., <i>Professor of Zoology.</i>	37 Admiral Rd.
C. A. CHANT, M.A., Ph.D., <i>Associate Professor of Astro-Physics.</i>	201 Madison Ave.
W. A. CLEMENS, M.A., Ph.D., <i>Lecturer in Biology.</i>	319 Avenue Rd.
A. P. COLEMAN, M.A., Ph.D., <i>Professor of Geology.</i>	476 Huron St.
A. T. DELURY, M.A., <i>Professor of Mathematics.</i>	University of Toronto
B. FAIRLEY, M.A., Ph.D., <i>Associate Professor of German.</i>	21 McMaster Ave.
J. H. FAULL, B.A., Ph.D., <i>Associate Professor of Botany.</i>	102 Yorkville Ave.
J. G. FITZGERALD, M.B., <i>Associate Professor of Hygiene.</i>	186 Balmoral Ave.
W. J. LOUDON, B.A., <i>Professor of Mechanics.</i>	133 Walmer Rd.
M. A. MACKENZIE, M.A., F.I.A., <i>Professor of Mathematics.</i>	1 Bellwoods Park
W. L. MILLER, B.A., Ph.D., <i>Professor of Physical Chemistry.</i>	50 St. Albans St.
G. H. NEEDLER, B.A., Ph.D., (Leipsic) <i>Professor of German.</i>	103 Bedford Rd. (On active service.)
W. A. PARKS, B.A., Ph.D., <i>Associate Professor of Geology.</i>	69 Albany Ave.
A. L. PARSONS, B.A., <i>Assistant Professor of Mineralogy.</i>	22 Kendal Ave.
T. L. WALKER, M.A., Ph.D., <i>Professor of Mineralogy and Petrography.</i>	20 Avondale Ave.
E. M. WALKER, B.A., M.B., <i>Assistant Professor of Zoology.</i>	67 Alcina Ave.
J. S. WILL, B.A., <i>Professor of French.</i>	56 Ranleigh Ave.

Sessional Appointments.

S. BEATTY, Ph.D., <i>Lecturer in Mathematics.</i>	22 Alvin Ave.
H. S. MCKELLAR, <i>Lecturer in French.</i>	41 McFarland Ave.
A. MACLEAN, B.A., <i>Lecturer in Geology.</i>	102 College St.
I. R. POUNDER, M.A., <i>Lecturer in Mathematics.</i>	1535 Dufferin Street.
J. E. THOMSON, B.A.Sc., <i>Lecturer in Mineralogy.</i>	57 Queen's Park

FACULTY OF APPLIED SCIENCE AND ENGINEERING.**Historical Sketch.**

The Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practical Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By the terms of this order the management and discipline of the School was vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degrees in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

By the University Act, 1906, the School of Practical Science was united to the University of Toronto as its Faculty of Applied Science and Engineering.

GRADUATING DEPARTMENTS.

There are eight regular Departments of Instruction leading to the degree of Bachelor of Applied Science:—

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical Engineering.
8. Metallurgical Engineering.

The instruction given in these departments extends over a period of four years and is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such training as may make him immediately useful when he commences professional work.

DEGREE OF MASTER OF APPLIED SCIENCE (M.A.Sc.).

(For requirements, see page 73.)

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem. E.), as the case may be, subject to the rules and regulations established by the University. (See page 73.)

FELLOWSHIPS.

Fellowships of the value of \$500 each, open to graduates, are offered annually in the various departments.

Applications for these fellowships are to be made annually in writing to the Secretary of the Faculty on or before the 1st day of May.

SCHOLARSHIPS.

The Boiler Inspection and Insurance Company of Canada offers a Scholarship in the Department of Mechanical Engineering of the value of \$130.00 to the student who obtains highest Honour Standing in the regular examinations of the third year.

The successful candidate will be expected to proceed to his fourth year during the session next following the date of the award.

The amount of the award will be credited by the Bursar to the fees of the fourth year of the successful candidate.

Research Fellowship.

Two research Fellowships of the value of \$500 each are offered annually by the Alumni Association of the Faculty of Applied Science and Engineering.

I. MATRICULATION.

1. The matriculation requirements of this Faculty are based upon those given in the curriculum for Junior Matriculation, a copy of which may be obtained on application.

2. A candidate for matriculation must produce satisfactory certificates of good character.

3. The subjects are as follows:

English, History, any three of the following, viz., Greek, Latin, French, German, Experimental Science, with pass standing in Honour Mathematics.

In selecting the options it is recommended that students take French, German and Experimental Science. In the department of Architecture French is required and in Applied Chemistry German is required.

4. The pass standard is forty per cent. of the marks assigned to a paper, with an average of sixty per cent.

5. A candidate who has obtained an average of sixty per cent. on all the papers but has failed to obtain forty per cent. in not more than two papers may complete matriculation by passing on these papers at any one subsequent examination.

6. A candidate who has obtained forty per cent. on each of at least eight papers, with an average of sixty per cent. on the same, will be credited with these papers. In order to complete his Matriculation, he must obtain at one subsequent examination forty per cent. on each of the remaining papers, with an average of sixty per cent.

7. The examination for pass and honour Junior Matriculation is held annually in June at centres in Ontario, and, if application is made to the Senate, the examination may, with the co-operation of the Department of Education, be held at centres outside Ontario.

8. Applications accompanied by the fee of \$5.00 must be sent not later than the 15th of May to the local Public School Inspector, or in the case of candidates intending to write at the University, to the Registrar.

9. A Junior Matriculation examination, at which no honour papers are set, will be held in September at the University and at such other centres as may from time to time be authorized. Candidates entitled to the privileges of supplemental examinations, as well as new candidates, may present themselves at this examination.

10. Applications to write on the September examination, together with the necessary fee, must be received at the Department of Education not

later than September 1, for those who wish to write at any centre established in Ontario, and not later than August 1 for any centre elsewhere in Canada.

11. Forms of application, the time-table of the September examination, and further particulars may be had upon application to the Department of Education.

II. ADMISSION.

A candidate for admission must have completed the seventeenth year of his age on or before the first of October of the year in which he seeks to enter.

Applications for admission must be made on blank forms supplied by the Registrar, and should be forwarded early in September.

Applications will be considered from (a) those who have completed matriculation, including those who hold certificates recognized as equivalent—see matriculation curriculum—, (b) those who have failed in not more than two papers of the matriculation examination. The latter must complete matriculation before being eligible to enter the second year.

Applications based upon other certificates than those mentioned will be considered as occasion may require. Such certificates must be accompanied by an official statement of the marks in the various subjects upon which the certificate was granted.

ADMISSION AD EUNDEM STATUM.

An undergraduate of another University may be admitted *ad eundem statum* on such conditions as the Senate on the recommendation of the Council of the Faculty may prescribe.

An applicant for admission *ad eundem statum* must submit with his petition (1) a calendar of his University giving a full statement of the courses of instruction; (2) an official certificate of character and academic standing.

III. REGISTRATION.

Registration in the various years will begin Sept. 1st. Blank cards for the purpose will be supplied by the Secretary on request. (See "Dues and Deposits," next page.)

IV. FEES.

All fees are payable at the Bursar's office between the hours 10 a.m. and 1 p.m. of each week day except Saturday.

The annual fees including tuition, library, laboratory supplies and one annual examination shall be as follows:

First Year.

If paid in full on or before November 5th..... \$100.00

By instalments:

First instalment, if paid on or before November 5th..... 50.00

Second instalment, if paid on or before February 5th..... 55.00

Second Year.

If paid in full on or before November 5th.....	\$110.00
By instalments:	
First instalment, if paid on or before November 5th.....	55.00
Second instalment, if paid on or before February 5th.....	60.00

Third and Fourth Years.

If paid in full on or before November 5th.....	\$120.00
By instalments:	
First instalment, if paid on or before November 5th.....	60.00
Second instalment, if paid on or before February 5th.....	65.00

Repeating the Year.

If paid in full on or before November 5th.....	\$50.00
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The above fees are payable in advance. After November 5th a penalty of \$1.00 per month will be imposed until the whole amount is paid. In the case of payment by instalments the same rule as to penalty will apply.

Students desiring to pay in instalments must have paid the fees due in the first term before proceeding to the work of the second term.

General Fees.

Matriculation, or registration of Matriculation.....	\$ 5.00
Supplemental examination.....	10.00
Admission <i>ad eundem statum</i>	10.00
Degree of B.A.Sc. (payable not later than April 1st).....	10.00
Degree of M.A.Sc.	25.00

Dues and Deposits.

(Payable to the Secretary of the Faculty at the time of registration.)

Engineering Society membership.....	\$2.00
Annual deposit.....	2.00

Charges for waste, neglect and breakage are to be met out of the deposit fee, the balance of which will be refunded to the student at the end of the session.

Students' Council Fee.

The Annual Fee.....	\$2.00
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Every male student in attendance, proceeding to the Degree of Bachelor of Applied Science and Engineering, is required to pay to the Bursar, at the time of the entry of his name with the Secretary, the Annual Fee of two dollars, for the maintenance of the Council of the Undergraduates.

GENERAL INFORMATION FOR STUDENTS.

The Council of University College and the governing bodies of the federated universities and colleges, respectively, have disciplinary jurisdiction over and entire responsibility for the conduct of their students in respect of all matters arising or occurring in or upon their respective college buildings and grounds, including residences.

The councils of such of the faculties as have assigned for their separate use any building or buildings and grounds, including residences, have disciplinary jurisdiction over and entire responsibility for the conduct of all students in their respective faculties in respect of all matters arising or occurring in or upon such building, or buildings and grounds.

In all such cases, and, save as aforesaid, as respects all students to whatsoever college or faculty they may belong, disciplinary jurisdiction is vested in the Caput, but the Caput may delegate its authority in any particular case or by any general regulation to the council or other governing body of the university or college or faculty to which the student belongs.

The Caput has also power and authority to determine by general regulations, or otherwise, to what college, faculty or other body the control of university associations belongs.

If there be any questions as to the proper body to exercise jurisdiction in any matter of discipline which may arise, the same shall be determined by the Caput, whose decision shall be final.

Disciplinary jurisdiction includes the power to impose fines.

REGULATIONS RESPECTING STUDENTS.

No student will be enrolled in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Council to be prejudicial to the interests of the University.

All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council. In particular, students of all Faculties are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles". Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

Any student who may be convicted of having taken part in processions through the city, which have not been authorized by the police authorities after application by the Executive of the Students' Council, will be severely disciplined.

All students shall be in attendance during the whole of each term. Those whose attendance or work is reported as unsatisfactory are liable to dismissal by the Council.

No student will be allowed to repeat the work of any year more than once.

Information as to the text-books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

MILITARY INSTRUCTION.

By order of the Board of Governors each male student proceeding to a degree must take a course of military instruction. He must first undergo a physical examination under the direction of the Physical Director of the

University in order to determine his fitness for such military instruction. Each student deemed unfit must take a course in Physical training such as will meet his special case.

OPTIONS.

In department 5, second year, an option is permitted between Biology and Calculus as the student, upon consultation with the head of the department in Chemistry, may decide.

In the fourth year, optional courses are arranged in certain departments. Students are required to submit their selection to the Secretary in writing, not later than September 15th. The proposed selection must be approved by Council before adoption.

REGULATIONS RESPECTING EXAMINATIONS.

Regular Examinations.

A student who in either term of the session fails to perform the work of his course in a manner satisfactory to the professors in charge, will not be allowed to present himself at the final examinations of the year.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the annual examinations in April, notice in writing of their intention to take such examinations. A penalty of \$1.00 will be imposed upon all candidates who fail to give notice within the proper time.

In the second, third and fourth years annual examinations will be held at the beginning of the second term on all subjects completed during the first term.

No student will be allowed to write at the annual examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examination will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, electrical design, optics, surveying and architecture, the drawings set in these subjects must be made.

Candidates who fail in passing the annual examinations will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

Term Examinations.

In the first year only, term examinations in three subjects will be held on the last two days of the first term.

The subjects will not be announced until the day previous to the first examination.

The results of these examinations will be incorporated with those of the annual examinations in the same subjects in the ratio of 1 to 2.

Supplemental Examinations.

A candidate who fails in one or two subjects at the Annual Examinations will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 1st of October, 1918. Candidates are required to send to the Secretary of the Faculty not later than the first of September, notice in writing of their intention to take such examinations, and to remit to the Bursar the fee of \$10.00. A penalty of \$1.00 will be imposed upon all candidates who fail to give notice within the time stated.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Vacation Work.

Vacation work must be handed in on or before the first day of the session.

Vacation notes must be on construction only, except in Department 2 (see p. 73), and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be freehand pencil drawings with figured dimensions.

Notes must be made in standard note books approved of by the Faculty. Notes which have been taken during the session in connection with the work in drawing will not count as vacation work.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

Shop Work.

Students in Mechanical and Electrical Engineering are not considered as having completed their course of study, nor are degrees granted until certificates have been submitted to the Council, and accepted as satisfactory, showing not less than eight months of mechanical experience in production of some kind under commercial conditions. Preferably the work undertaken should be in one of the manufacturing industries or trades with which the Course is related.

It is not desirable that any student in these Courses should enter sales or other non-production departments of the engineering industries without having acquired some personal experience in mechanical production. It is best to obtain this experience under commercial conditions. Otherwise one can not at all appreciate shop conditions and limitations.

Honours.

Honours will be granted in each department to the students who obtain at least 40 per cent. in each subject, and 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Honour Graduate standing will be granted to those who obtain honours in the final and in one previous year.

REGULATIONS RESPECTING TERM WORK.

Students working in any laboratory must be governed by the regulations relating thereto as made known from time to time.

No laboratory reports or drawings may be removed from the laboratories without permission. The Council reserves the right to dispose of them as may be thought proper.

Field Work.

No field notes will be counted which have not been taken in the field and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

Drafting Rooms.

Drawings and briefs for same, that are required to be finished the first term of the session will not be counted unless finished in that term.

The minimum number of drawings in first and second years shall be twenty-five, and the maximum number thirty-five, except in the Department of Analytical and Applied Chemistry, in which the number shall be fifteen and twenty-five respectively.

No drawings or briefs for same will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

Theses.

In the Fourth Year each student is required to prepare a thesis on a subject approved by the Council. The title of the thesis must be sent to the Secretary of the Faculty for approval on or before November 1st, and the completed thesis must be handed in not later than the first day of the second term and shall become the property of the University. The rules governing size, form, etc., may be obtained on application to the Secretary.

EXEMPTIONS.

Applications for exemption from any of the regulations must be made to the Council in writing and the particulars of the case fully stated.

COURSES OF INSTRUCTION.

On the following pages the courses of instruction in the various departments are set forth in detail. The time devoted to the various subjects, both for lectures and practical work, is indicated as accurately as possible but is subject to modifications from time to time as occasion seems to require. In the First Year the course is common to all departments except Architecture and Applied Chemistry (courses 4 and 5). In the Second Year the courses in Mechanical and Electrical Engineering (courses 3 and 7) are identical.

1. DEPARTMENT OF CIVIL ENGINEERING.

The courses of study in Civil Engineering are designed to give the student a sound training in the fundamental scientific principles on which the practice of the profession is based. The instruction is given by means of lectures and practical work in the field, the drafting room and the laboratory. In this way the student is led to apply the principles developed in the classroom.

Civil Engineering—First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying.....	205, 206	1	8	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry.....	75	2		2	
Electricity.....	135, 136	2		2	
Engineering Problems.....	193	1		1	
Drawing.....	117		11		20
Military Instruction.....	221		3		3

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Spherical Trigonometry.....	191	1			
Elementary Astronomy.....	55	1		1	
Descriptive Geometry.....	121	1		1	
Surveying.....	207, 208	1	8	1	
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Optics.....	197	1	1½	1	1½
Hydrostatics.....	196			1	1
Engineering Chemistry.....	85			1	
Organic Chemistry.....	87	1			
Mineralogy.....	159, 161	2	1		3
Metallurgy.....	183			1	
Banking and Finance.....	66	1		1	
Drawing.....	123		8		15
Chemical Laboratory.....	81		3		3
Military Instruction.....	221		3		3

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y
Vacation Work.....	220				
Least Squares.....	192			1	
Practical Astronomy and Geodesy.....	56, 57	2		2	
Surveying and Levelling....	209, 210	1	8	1	
Descriptive Geometry.....	127	1			
Hydraulics.....	29, 30	2		2	3
Photography.....	199	1	1½		1½
Ferro-Metallurgy.....	181	1		1	
Theory of Structures.....	18	2		2	
Cements and Concrete.....	21			1	
Engineering Chemistry....	94	1		1	
Geology.....	150	1		1	
Limited Companies.....	67	1		1	
Heat.....	198	1	1½		
Strength of Materials.....	14				2
Drawing.....	128		6		19
Military Instruction	221		3		3

Fourth Year.

†Foundations.....	20	1	1	1	1
Electricity.....	140	1		1	
†Thermodynamics.....	34, 39a	1		1	2
Economic Geology.....	151	1		1	
Contracts and Specifications	68			1	
Thesis.....	219				
Military Instruction	221		3		3
And one of					
(a) { Astronomy.....	58, 59	2	23	2	
{ Geodesy.....	60	2		2	23
(b) { Sanitary Engineer- ing.....	213	1½	16	1½	16
{ Highway Engineer- ing.....	214	1	6	1	6
(c) Structural Engineer- ing.....	215	6	22	7	22
(d) Strength of Materials 16, 17, 22, 23		3½	11	3½	11
with either :					
(1) Hydraulics.....	31, 31a, 32	3	10	3	10
or					
(2) Railway Engineering.	211, 212	2	11	2	11

† Not required of those taking the Astronomy option.

2. DEPARTMENT OF MINING ENGINEERING.

The course in Mining Engineering is intended to serve as a preliminary training for those who expect to practise the art of mining or metallurgy. In the second year it differs very little from the course in civil engineering, in the third year some subjects peculiar to mining and metallurgy are taken up.

In general this course is designed to first give the student a good training in the parts of engineering essential to all branches, such as surveying, drafting, etc., and then in the upper years to allow him to follow studies peculiar to mining engineering.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least six months' practical experience in work connected with mining, metallurgy or geology, for which they must have received regular wages. Certificate forms, giving full details as to acceptable classes of work, will be furnished on application, and should be obtained by all students before entering employment.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying.....	205, 206	1	8	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry.....	75	2		2	
Electricity.....	135, 136	2		2	
Engineering Problems.....	193	1		1	
Drawing.....	117		11		20
Military Instruction.....	221		3		3

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	121	1		1	
Surveying.....	207, 208	1	9	1	
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Optics.....	197	1	1½	1	1½
Hydrostatics.....	196			1	1
Inorganic Chemistry.....	79	1			
Organic Chemistry.....	87	1			
Engineering Chemistry.....	85			1	
Mineralogy.....	157, 160	2	1		3
Geology.....	150	1		1	
Mining.....	170, 171	1	3		
Metallurgy.....	183			1	
Banking and Finance.....	66	1		1	
Drawing.....	123		3		14
Chemical Laboratory.....	81, 82		3		3
Military Instruction.....	221		3		3

Mining Engineering—Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work.....	220				
Surveying and Levelling.....	209, 210	1	8		
Theory of Structures.....	19	2			
Hydraulics.....	29a	2		2	
Electricity.....	140	1		1	
Engineering Chemistry.....	94	1		1	
Analytical Chemistry.....	80	1		1	
Assaying.....	173	1	3		3
Petrography.....	163	1		1	
Mineralogy.....	164		2		2
Economic Geology.....	151, 156	1		2	2
Ore Deposits.....	155	1		1	
Mining.....	172			2	3
Ore Dressing.....	177	1		1	
Ferro-Metallurgy.....	181	1		1	
Metallurgy.....	184	1		1	
Limited Companies.....	67	1		1	
Drawing.....	132		7		2
Chemical Laboratory.....	93				11
Military Instruction	221		3		3

Fourth Year.

Thermodynamics.....	34	1		1	
Electrochemistry.....	101	2			
Assaying.....	174			1	3
Petrography.....	165, 166	1	2	1	2
Geology, Archaean and Glacial.....	152	2	1	2	
Geology, Mining.....	153	1		1	
Mining.....	175	1		1	
Ore Dressing.....	179	1		1	
Metallurgy.....	180, 182	1		1	5
Cost-keeping, etc.....	70	1		1	
Milling.....	176				5
Power.....	32a, 39a, 141		3		2
Design.....	215		3		3
Chemical Laboratory.....	112		10		
Thesis.....	219		6		2
Military Instruction	221		3		3

3. DEPARTMENT OF MECHANICAL ENGINEERING.

The course in this Department is designed to meet the needs of those students who are intending to take up the work connected with Mechanical Engineering, such as the design of gas engines, steam engines, steam boilers, steam turbines, air compressors, etc.; the design and installation of the machinery connected with power plants and central stations, steam piping and other similar problems. The work is also so arranged that the student becomes somewhat familiar with the design of travelling cranes and mill buildings and similar problems connected with structural steel work.

Since the work of the mechanical engineer and of the electrical engineer is closely allied, the courses in these two departments in the first two years are identical and cover the subjects mentioned below.

In the third year the work becomes more specialized, the mechanical engineers paying more attention to heat engines of various types, and to mill building design and other work of similar nature. The study of electricity is continued and the student gets considerable practice in the mechanical and electrical laboratories.

In the fourth year the student devotes himself still more closely to his chosen work, placing the greater stress on thermodynamics and the theory and testing of heat engines, and problems in machine design. Much time is spent in the mechanical laboratories testing gas and steam engines and other machines.

Before receiving the degree in this department candidates are required to present satisfactory evidence of having had at least eight months' practical experience in one of the principal trades connected with Mechanical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering, as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

Mechanical Engineering—First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying.....	205, 206	1	8	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry....	75	2		2	
Electricity.....	135, 136	2		2	
Engineering Problems.....	193	1		1	
Drawing.....	117		11		20
Military Instruction.....	221		3		3

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	121	1		1	
Dynamics.....	12	1		1	
Theory of Mechanism.....	25	2		2	
Steam Engines.....	38	1			
Strength of Materials.....	13	2		2	
Optics.....	197	1	1½	1	1½
Hydrostatics.....	196			1	1
Electricity.....	138, 139	2	2½	2	2½
Engineering Chemistry.....	85			1	
Organic Chemistry.....	87	1			
Banking and Finance.....	66	1		1	
Drawing.....	123		13		11
Chemical Laboratory.....	81		3		3
Machine Details.....	28a			1	
Military Instruction.....	221		3		3

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work.....	220				
Mechanics of Machinery...	26	1		1	
Machine Design.....	27	1	6½	1	6½
Thermodynamics.....	33, 35	2	2	2	2
Heat Engines.....	39	1		1	
Hydraulics.....	29, 30	2		2	1
Theory of Structures.....	19	2			
Ferro-Metallurgy.....	181	1		1	
Magnetism and Electricity.	144, 142	2	3½	2	3½
Alternating Current.....	143	1		1	
Engineering Chemistry.....	94	1		1	
Limited Companies.....	67	1		1	
Strength of Materials.....	14		2		
Drawing.....	132		8		
Military Instruction	221		3		3

Fourth Year.

Mill Building Design.....	24	1	3	1	3
Cost-keeping, etc.....	69	1		1	
Machine Design.....	28	1	4	1	4
Thesis.....	219				
Military Instruction.....	221		3		3
And two of					
(d) Hydraulics.....	31, 31a, 32	3	9	3	9
(e) Strength of Materials	16, 17, 22, 23	3½	10	3½	10
(g) Thermodynamics....	36, 36a, 37	3	10	3	10

4. DEPARTMENT OF ARCHITECTURE

The instruction in this department is arranged to lay a broad foundation for the subsequent professional life of its graduates, and incidentally to prepare its students to be immediately useful in an architect's office. The curriculum has been arranged to meet the aesthetic and scientific needs of the profession, and includes History and Principles of Architecture, Free-hand Drawing in pencil, ink and color, Modelling, Architectural Design, Analysis and Criticism of Buildings, Mathematics, Statics, Strength and Elasticity of Materials, Theory of Construction and Heating and Ventilation.

The equipment of the department includes a working library of 1,000 volumes, a large file of periodicals, 2,500 photographs, 2,000 stereographic photos, 4,500 lantern slides, and a large collection of models and casts.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	116	1		1	
Building Measurement.....	52	1	9	1	
Statics.....	10	2		2	
Elementary Chemistry	75	2		2	
History and Principles of Architecture.....	40	1	3	1	
French.....	217	1		1	
Accounts.....	65	1		1	
Drawing.....	118		9		18
Freehand Drawing.....	49		2		2
Modelling.....	50		2		2
Military Instruction	221		3		3

Second Year

Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	122	1		1	
Strength of Materials.....	13	2		2	
Optics and Lighting.....	197a	1	1½		
Illumination.....	200			1	1½
Architectural Design.....	46	1		1	
History of Architecture.....	41	1		1	

Second Year—Continued.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Orders of Architecture.....	45	1		1	
History of Ornament.....	43	1		1	
French.....	217	1		1	
Banking and Finance.....	66	1		1	
Drawing					
Architectural Design }	125		17		17
Freehand Drawing... }	49a		2		2
Modelling.....	50a		2		2
Military Instruction	221		3		3

Third Year.

Vacation Work.....	220				
Descriptive Geometry.....	131				
Acoustics.....	195	1	1½		
History of Architecture....	42	1		1	
History and Principles of Ornament.....	44	1		1	
Architectural Design.....	47	1		1	
Building Materials.....	53	2		2	
Theory of Structures.....	19	2			
Cements and Concrete.....	21			1	
Limited Companies.....	67	1		1	
Strength of Materials.....	14				2
Photography.....	199	1	1½		1½
Modelling.....	50b		2		2
Water Color Painting.....	49b		2		2
Drawing	130		7		
Architectural Design }			6		22
Military Instruction	221		3		3

Fourth Year.

Strength of Materials.....	22	1		1	6
Structural Design.....	51	1	1	1	1
Electricity.....	140	1		1	
Heating and Ventilating....	54a	1		1	
Sanitary Science.....	54	1		1	
Contracts and Specifications	68			1	
Thesis.....	219		3		3
Drawing from life.....	49c		2		2
Modelling from life.....	50c		2		2
Military Instruction	221		3		3
And one of					
(l) Architectural Design.	48	2	17	2	17
(m) Architectural Engineering.....	216	4	19	3	23

5. DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.

The course in Analytical and Applied Chemistry is designed to furnish instruction suitable for those students who intend to practise chemistry as a profession, either as analysts or as works chemists.

SUBJECTS OF INSTRUCTION.**First Year.**

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Electricity and Magnetism.	135	1		1	
Biology.....	61, 62	2		2	6
Accounts.....	65	1		1	
Electric Circuits.....	136	1		1	
Elementary Chemistry.....	75	2		2	
Elementary Mineralogy....	157	2			
Inorganic Chemistry.....	77			1	
German.....	218	1		1	
Drawing.....	119		3		3
Electrical Laboratory.....	137	1½	1	1½	
Chemical Laboratory.....	78		8		12
Mineralogical Laboratory...	158		4		3
Military Instruction	221		3		3

Second Year.

Electricity.....	138, 139	2	2½		2½
Engineering Chemistry.....	85			1	
Industrial Chemistry.....	86	1		1	
Organic Chemistry.....	88	2		2	
Physical Chemistry.....	90	2		2	
Inorganic Chemistry.....	79	1			
Analytical Chemistry.....	80	1		1	
Optics.....	197	1	1½	1	1½
Hydrostatics.....	196			1	1
Geology.....	150	1		1	
*Biology or {	63				3
Calculus {	190	2		2	
German.....	218	1		1	
Banking and Finance.....	66	1		1	
Chemical Laboratory.....	89		12		13
Metallurgy.....	183			1	
Mineralogical Laboratory...	162				1
Military Instruction	221		3		3

*Students should consult the head of the Department of Chemistry as to the option to be selected.

Third Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Electrochemistry.....	101, 102	2	3		
Engineering Chemistry...	94	1		1	
Industrial Chemistry.....	95	1		1	
Organic Chemistry A.....	97	2		2	
Organic Chemistry B.....	98			1	
Chemical Plant.....	96	1		1	
Ferro-Metallurgy.....	181	1		1	
Metallurgy.....	184	1		1	
Economic Geology.....	151	2		2	
Crystallography.....	167	1		1	
Limited Companies.....	67	1		1	
German.....	218	1		1	
Chemical Laboratory.....	91		13		17
Assaying.....	173		1½		1½
Heat.....	198	1	1½		
Electricity.....	140			1	
Military Instruction.....	221		3		3

Fourth Year.

Inorganic Chemistry.....	103	1	3	1	
Organic Chemistry.....	104	1	15	1	
Cost-keeping, etc...	69	1		1	
German.....	218	1		1	
Thesis.....	219				
Military Instruction.....	221		3		3
And one of					
(h) Electrochemistry.....	108, 109	2	11	2	29
(i) Industrial Chemistry.	106, 107	1	12	1	30
(j) Sanitary and Forensic Chemistry and Bac- teriology.....	64, 110, 111	1	12	2	29
(k) Metallurgy.....	180	2	11	1	30

6. DEPARTMENT OF CHEMICAL ENGINEERING.

In many industries there is a demand for a man who combines the technical knowledge of the mechanical engineer with a knowledge of chemistry. It is to fill this want that the course in Chemical Engineering is designed.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term.	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying.....	205, 206	1	8	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry.....	75	2		2	
Electricity.....	135, 136	2		2	
Engineering Problems.....	193	1		1	
Drawing.....	117		11		20
Military Instruction.....	221		3		3

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Strength of Materials.....	13	2		2	
Electricity.....	138, 139	2	2½	2	2½
Engineering Chemistry.....	85			1	
Industrial Chemistry.....	86	1		1	
Organic Chemistry.....	88	2		2	
Physical Chemistry.....	90	2		2	
Inorganic Chemistry.....	79	1			
Optics.....	197	1	1½	1	1½
Hydrostatics.....	19			1	1
German.....	218	1		1	
Banking and Finance.....	66	1		1	
Drawing.....	123		10		11
Chemical Laboratory.....	84		6		6
Metallurgy.....	183			1	
Machine Details.....	28a			1	
Military Instruction.....	221		3		3

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term.	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work.....	220				
Theory of Structures.....	19	2			
Thermodynamics.....	33, 35	2	2	2	1½
Electrochemistry.....	101, 102	2	3		
Engineering Chemistry....	94	1		1	
Organic Chemistry A.....	97	2		2	
Organic Chemistry B.....	98			1	
Industrial Chemistry.....	95	1		1	
Analytical Chemistry.....	80	1		1	
Metallurgy.....	184	1		1	
Ferro-Metallurgy.....	181	1		1	
Chemical Plant.....	96	1		1	
Limited Companies.....	67	1		1	
German.....	218	1		1	
Machine Design.....	27	1	3½	1	3½
Assaying.....	173		1½		1½
Electricity.....	140			1	
Drawing.....	132		3		
Chemical Laboratory.....	92		8		11
Military Instruction	221		3		3

Fourth Year.

Hydraulics.....	29a	2		2	
Inorganic Chemistry.....	103	1	3	2	
Organic Chemistry.....	104	1	13	1	
Cost-keeping, etc.....	69	1		1	
Power.....	32a, 141		2		2
German.....	218	1		1	
Thesis.....	219				
Military Instruction	221		3		3
And one of					
(h) Electrochemistry.....	108	2	9	2	24
(i) Industrial Chemistry.	106, 107	1	10	1	25
(j) Sanitary and Forensic Chemistry and Bac- teriology.....	64, 110, 112	1	10	2	24
(k) Metallurgy.....	180	1	10	1	25

7. DEPARTMENT OF ELECTRICAL ENGINEERING.

The course in Electrical Engineering is arranged to provide preliminary training for those who would follow any of the various lines of activity connected with electrical industry.

The first two years of the course are devoted to fundamental scientific principles, and incidentally more or less of their application to engineering problems in mechanical, civil and electrical work. Many problems are solved in the drafting rooms by graphical methods. The third year includes further theoretical work, more particular attention being given to electrical and mechanical studies in theory, operation and design. The fourth year is devoted to advanced work in alternating current theory and practice combined with similar study in thermodynamics, hydraulics or electrochemistry.

A large amount of laboratory practice is provided, most of which belongs to the third and fourth years. In this last year most of the time is spent in laboratory investigations and studies resulting therefrom.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' mechanical experience in one of the principal trades connected with Electrical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying	205, 206	1	8	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry.....	75	2		2	
Electricity.....	135, 136	2		2	
Engineering Problems.....	193	1		1	
Drawing.....	117		11		22
Military Instruction.....	221		3		3

Second Year.

Subject.	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Laby'.
Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	121	1		1	
Optics.....	197	1	1½	1	1½
Hydrostatics.....	196			1	1
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Theory of Mechanism.....	25	2		2	
Steam Engines.....	38	1			
Electricity.....	138,139	2	2½	2	2½
Engineering Chemistry.....	85			1	
Organic Chemistry.....	87	1			
Banking and Finance.....	66	1		1	
Drawing.....	124		9		16
Chemical Laboratory.....	81		6		
Machine Details.....	28a			1	
Military Instruction	221		3		3

Third Year.

Vacation Work.....	220				
Mechanics of Machinery....	26	1		1	
Machine Design.....	27	1	2½	1	2½
Hydraulics.....	29,30	2		2	1
Thermodynamics.....	33,35	2	2	2	1½
Heat Engines.....	39	1		1	
Electrochemistry.....	101,102	2	3		
Magnetism and Electricity..	142	2		2	
Alternating Current.....	143	1		1	
Electrical Design.....	145	1	1½	1	3
Electrical Laboratory.....	144		4		4
Engineering Chemistry.....	94	1		1	
Ferro-Metallurgy.....	181	1		1	
Limited Companies.....	67	1		1	3
Military Instruction	221		3		3

Fourth Year.

Applied Electricity.....	146,147	3	16	3	16
Cost Keeping, etc.....	69	1		1	
Thesis.....	219				
Military Instruction.....	221		3		3
And one of:					
(d) Hydraulics.....	31, 31a, 32	3	9	3	9
(g) Thermodynamics.....	36, 36a, 37	3	9	3	9
(h) Electrochemistry.....	108,019	2	9	2	9

8. DEPARTMENT OF METALLURGICAL ENGINEERING.

The object of this course is to provide instruction and preliminary training for those who intend to become metallurgical engineers. Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' experience in metallurgical work.

First Year.

Subject	No	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying.....	205, 206	1	8	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry....	75	2		2	
Electricity.....	135, 136	2		2	
Engineering Problems.....	193	1		1	
Drawing.....	117		11		20
Military Instruction	221		3		3

Second Year.

Calculus	190	2		2	
Descriptive Geometry.....	121	1		1	
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Hydrostatics.....	196			1	1½
Electricity.....	140			1	
Steam Engines.....	38	1			
Chemistry.....	79, 80, 85	2		2	
Physical Chemistry.....	90	2		2	
Banking and Finance.....	66	1		1	
Chemical Laboratory.....	93		10		8
Mineralogy.....	169		1		1
Mining.....	170, 171	1	3	1	
Metallurgy.....	183, 185	1		2	2
Spanish.....		1		1	
Drawing.....	121		5		5
Military Instruction	221		3		3

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Theory of Mechanism.....	25	2		2	
Hydraulics.....	29a	2		2	
Theory of Structures.....	19	2			
Limited Companies.....	67	1		1	
Chemical Laboratory	93		4		4
Electrochemistry.....	101, 102	2	3		
Ferro-Metallurgy.....	181	1		1	
Cement and Concrete.....	21			1	
Assaying.....	173	1	2		2
Metallurgy.....	186	1	1	4	6
Mining.....	172			2	3
Ore Dressing.....	177	1		1	
Heat.....	198	1	1½		
Drawing.....			3		
Military Instruction	221		3		3

Fourth Year.

Thermodynamics.....	34	1		1	
Heat Engines.....	39	1		1	
Ore Dressing.....		2	2	2	4
Assaying.....	174			1	3
Cost-Keeping.....	70	1		1	
Plant Design.....		1	3	1	3
Power.....	32a, 39a, 141		3		3
Metallurgy.....	186a	2	8	2	8
Thesis.....			3		3
Military Instruction	221		3		3

OUTLINE OF COURSES OF INSTRUCTION.

APPLIED MECHANICS.

10. STATICS:—*T. R. Loudon.*

Departments 1, 2, 3, 4, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with forces in a single plane, and concerns chiefly the calculation of tension, compression and shearing stresses in frame structures and solid beams. It also deals with the consideration of problems relating to friction.

11. DYNAMICS:—*J. McGowan.*

Departments 1, 2, 3, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with bodies having motion of translation in one plane; also with relative motion, momentum, work and energy.

Text book:—Tutorial Dynamics—Briggs and Bryan.

12. DYNAMICS OF ROTATION:—*W. J. Loudon.*

Departments 1, 2, 3, 7 and 8, II Year; 1 hour per week; both terms.

This course covers angular motion, including moments of inertia, simple harmonic motion, the pendulum, centres of mass, suspension and percussion, the simple theory of the fly-wheel and the governor.

Text book:—Dynamics of Rotation—Worthington.

13. STRENGTH OF MATERIALS:—*P. Gillespie.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; 2 hours per week; both terms.

In this course the strength and elasticity of materials are mathematically treated. The stresses in such elements of structures as the tie rod, the beam, the strut and the member subjected to shear are investigated and the elementary principles of design established. In the lecture and drafting rooms through numerous problems involving the design of simple beams, columns, riveted connections, etc., these principles are exemplified. The work includes also the discussion of eccentric loading, suddenly applied loads and repeated stresses.

Reference Book:—Mechanics of Materials—Merriman.

14. STRENGTH AND ELASTICITY OF MATERIALS:—*J. McGowan.*

Departments 1, 3 and 4, III Year; 2 hours per week; one term.

This course is intended to give the student an introduction to the experimental study of the strength and elasticity of materials. It is intended that he shall acquire some familiarity with the construction and operation of testing machines and with the properties of the ordinary building materials.

Reference Book:—Laboratory Instructions, Department of Applied Mechanics, U. of T., 1913.

16. THEORY OF STRUCTURES:—*J. McGowan.*

Departments 1 and 3, IV Year; 2 hours per week; both terms.

The work taken up in this course of lectures consists in swing bridges, arches, suspension bridges and some special features in column construction.

Reference Books:—Modern Framed Structures—Johnson. Typical Steel Railway Bridges—Thomson.

17. STRENGTH AND ELASTICITY OF MATERIALS:—*P. Gillespie.*

Departments 1, 3 and 4, IV Year; a laboratory course of about 11 hours per week.

This course of experiments is intended to give the student practice in investigating the elastic and physical properties of iron, steel, concrete, timber and other building materials.

Reference book:—Materials of Construction—Johnson.

18. THEORY OF STRUCTURES:—*C. R. Young.*

Department 1, III Year; 2 hours per week; both terms.

The work of the first term comprises a thorough discussion of restrained, continuous and trussed beams, multiple beam and box girders, plate girders and certain practical aspects of column design. A number of designs of girders and structural details are worked out in the class and drafting rooms.

The second term is given chiefly to the design of a riveted truss highway span and a riveted truss railway span, the complete designs being made in the lecture and drafting rooms.

19. THEORY OF STRUCTURES:—*C. R. Young.*

Departments 2, 3, 4, 6 and 8, III Year; 2 hours per week; first term.

The work is practically the same as that for Department 1 in the first term.

Text books:—Modern Framed Structures—Johnson, Bryan and Turneaure; Theory of Structures—Spofford; Bridge and Structural Design—Thomson; Aids in Structural Design—Young; Carnegie Pocket Companion; Cambria Steel.

20. FOUNDATIONS, RETAINING WALLS AND DAMS:—*P. Gillespie.*

Department 1, IV Year; 1 hour per week; both terms.

This course of lectures is devoted to the design of the structures mentioned. Preparatory to the discussion of the practical aspects of the subjects, and in order to gain familiarity with the fundamental principles involved, a part of the first term is given over to the consideration of the theory of compound stress. The most approved forms of construction of retaining walls, footings, abutments, piers and dams are then described, and typical designs are worked out in the class and drafting rooms.

Text books and books of reference:—Retaining Walls for Earth—M. A. Howe; Walls, Bins and Grain Elevators—M. S. Ketchum; A Treatise on Masonry Construction—I. O. Baker; Design and Construction of Dams—E. Wegmann.

21. CEMENTS AND CONCRETE:—*P. Gillespie.*

Departments 1, 4 and 8, III Year; 1 hour per week; second term.

The manufacture, testing and use of Portland cement and the fundamentals of the theory of reinforced concrete are discussed in this course of lectures.

22. REINFORCED CONCRETE:—*P. Gillespie.*

Departments 1, 3 and 4, IV Year; 1 hour per week.

The theory of the strength of reinforced concrete elements including the beam, the slab, the T-beam and the column, is continued in this course.

The analysis of the monolithic arch by the elastic theory is discussed, and the student is required in the drafting room to apply his knowledge to the design of simple structures.

Reference books:—Principles of Reinforced Concrete Construction—Turneaure and Maurer; Concrete, Plain and Reinforced—Taylor and Thompson.

23. IRON AND STEEL:—*T. R. Loudon.*

Taken by students in IV Year, who select the options (c) Structural Engineering, and (e) Strength and Elasticity of Materials.

Metallography—Mechanical Treatment, Heat Treatment; Metallurgy; Physical Properties; 1 lecture per week. Laboratory, second term.

24. MILL BUILDING DESIGN:—*C. R. Young.*

Departments 1 (*Structural Engineering Option*), 3 and 4 (*Architectural Engineering Option*), IV Year; 1 hour per week; both terms.

The structural problems involved in the design of mill buildings of timber, steel and reinforced concrete are discussed in this course of lectures. Consideration is given to the various types of buildings, the conditions governing their choice and the details of construction in different materials. Designs of portions of mill buildings are worked out in the class and drafting rooms.

Text books:—Mill Buildings—Tyrrell; Steel Mill Buildings—Ketchum.

24a. MISCELLANEOUS STRUCTURES:—*C. R. Young.*

Department 1 (*Structural Engineering Option* and *Sanitary and Highway Engineering Option*), IV Year; 1 hour per week, second term.

In this course of lectures the application of theoretical principles to the design of a variety of structures is made. Among those structures discussed are transmission line towers, elevated tanks and their supporting towers, standpipes, large pressure pipes, sewers, culverts, small highway bridges, sub-surface tanks and tall chimneys. Whenever possible the lecture work is followed up by designs in the drafting rooms.

MACHINERY.

25. THEORY OF MECHANISM:—*J. H. Parkin.*

Departments 3 and 7, II Year; Department 8, III Year; 2 hours per week; both terms.

This course of lectures treats of the motions of machines, the latter being assumed to be of sufficient strength to resist acting forces. The formation of machines is dealt with in a general way and the efficiency of machines considered. Investigations of the velocities of points and links are made. The design of gear teeth and the application of trains of gears are taken up, also problems in static equilibrium.

Problems are worked out in the drafting room in which the methods given are employed.

Text book:—Theory of Machines—Angus.

26 MECHANICS OF MACHINERY:—*J. H. Parkin.*

Departments 3 and 7, III Year; 1 hour per week; both terms.

In this course the questions dealt with are the construction of acceleration diagrams, the determination of the accelerations of various parts of machines, the kinetic energy of machines, the effect of the weights and accelerations of parts on the velocity of the fly-wheel and the proper weight of the latter to fulfil given conditions. The theory of various forms of governors is fully taken up and also the efficiency of machines.

Text book:—Theory of Machines—Angus.

27. MACHINE DESIGN—*J. H. Billings.*

Departments 3 and 7, III Year; 2 hours per week; both terms. Department 6, III Year; first term only.

Using the previous work in mechanics and kinematics as a groundwork, the lectures in this course deal with the design of shafting, journal bearings, gearing, flywheels, belting, springs, clutches, ball and roller bearings, machine supports, framing, etc.

The problems worked out in the design room are planned to include the principal parts of some complete machine such as an engine or machine tool.

The design work occupies $7\frac{1}{2}$ hours per week for Department 3, $4\frac{1}{2}$ hours for Department 6 and $3\frac{1}{4}$ hours for Department 7.

28. ADVANCED MACHINE DESIGN—*J. H. Billings.*

Department 3, IV Year; lectures, 1 hour per week; design, 4 hours per week; both terms.

The work of this course gives practice in the design of complete machines from specifications, having regard for durability, safety, cost of materials, and difficulties in casting, machining and assembling. Mechanisms are developed to give required motions and control.

The lectures deal also with compound stress, helical gearing and questions of vibration and stability. Machine tools, automatics and process machinery are discussed as far as time will allow.

28a. MACHINE TOOLS—*J. H. Billings.*

Departments 3, 6 and 7, II Year; 1 hour per week; second term.

A course of lectures dealing with the construction and operation of machine tools and some classes of process machinery. The object of the course is to familiarize the student with the principles of metal removal and acquaint him with a few typical machine tools.

HYDRAULICS.

29. HYDRAULICS—GENERAL COURSE:—*J. J. Traill.*

Departments 1, 3 and 7, III Year; 2 hours per week.

This is an introductory course of lectures in hydraulics, and is devoted to the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of discharge by various methods, such as orifices and weirs, the conditions of flow obtaining in open channels, artificial and natural, and in pipes flowing partially full, together with other kindred subjects

The object of this course is to provide the student with a good working knowledge of the fundamental principle of hydraulics, such as is useful in practical work, and is necessary to the intelligent investigation of more advanced problems, such as the design of turbines, water-wheels and power plants generally.

29a. HYDRAULICS:—*J. J. Traill.*

Departments 2 and 8, III Year; Department 6, IV Year.

This course deals with the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of water by various methods, the conditions of flow in open channels and in pipes partly full. This work is followed by a brief discussion on pumps and other hydraulic machines.

30. HYDRAULIC LABORATORY:—*R. W. Angus, J. J. Traill.*

Department 1, III Year; 3 hours per week; one term. Departments 3 and 7, III Year; 4 periods of 3 hours each.

The work in this course is intended to illustrate the lecture course given in Hydraulics and to give the student some working acquaintance with the formulas met with in practice. Experiments are made to determine the coefficients for an orifice and the coefficients of discharge for a weir. The results of these experiments are used in measuring the discharge in subsequent experiments on meters and for the determination of hydraulic resistances in various cases of flow in pipes.

31. HYDRAULICS:—*J. J. Traill.*

Departments 1, 3 and 7, IV Year; 1 hour per week; both terms.

Following up the third year course in this subject the theory already acquired is applied to the solution of problems connected with branched pipes, water-mains discharging at various points along their length, the effect of a dam on the water level at any point on a stream and numerous other problems. The applications of hydrographic data and precipitation, evaporation and run-off relations are also considered.

31a. HYDRAULICS:—*R. W. Angus.*

Departments 1, 3 and 7, IV Year; 2 hours per week, both terms.

The most important question considered and to which most of the lectures are devoted is the theory of turbines and centrifugal pumps, the effect of the design on the speed, discharge power and efficiency being fully taken up.

Text books:—Centrifugal Pumps—Loewenstein and Crissey; Hydraulics—Merriman; Water Power Engineering—Mead.

32. HYDRAULICS:—*R. W. Angus, J. J. Traill.*

Departments 1, 3 and 7, IV Year; about 10 hours per week.

A laboratory course devoted to experimental work on turbines of various types and centrifugal and turbine pumps and other similar devices. This experimental work is arranged to illustrate the lectures on turbine and pump design. The experiments are made on two large turbine pumps used in the laboratory supply, as well as on apparatus specially designed for instruction. Various methods of measuring water-power and the efficiency of machines are also given.

32a. POWER:—*J. J. Traill.*

Departments 2, 6 and 8, IV Year; 24 hours.

A laboratory course of experiments on orifices, weirs, turbines, meters, pumps, etc.

32b. HYDRAULICS:—*J. J. Traill.*

Department 1, IV Year.

This is a lecture and laboratory course of six hours per week, first term, dealing with the flow of water in pipes and open channels, measurement of water, and pumps and pumping.

HEAT ENGINES.

33. THERMODYNAMICS:—*R. W. Angus.*

Departments 3, 6 and 7, III Year; 2 hours per week.

A lecture course in which the subject is treated in such a way as to make it of practical value and give a working acquaintance with the principles on which it is based. After the elementary ideas have been given and the proofs of the properties of Carnot's cycle, applications of the subject are made to the perfect gas and to saturated steam and to the various types of engines. Temperatures are taken from the air thermometer.

34. THERMODYNAMICS:—*R. W. Angus.*

Departments 1, 2 and 8, IV Year; 1 hour per week; both terms.

This course is especially designed to give the student a working knowledge of thermodynamics as applied to the perfect gas and steam so that he will be able to understand clearly the action of air compressors, steam engines, etc. After deducing general principles, the efficiency of compressed air transmission and the relative merits of different types of compressors are discussed. The steam engine and boiler are also discussed.

35. THERMODYNAMIC AND MECHANICAL LABORATORY:—*R. W. Angus, L. M. Arkley.*

Department 3, III Year; 2 hours per week, first term; 3 hours per week, second term. Departments 6 and 7, III Year; 2 hours per week, first term; 1½ hours per week, second term.

This laboratory course is designed to assist in a clearer understanding of thermodynamics, machine design and mechanics of machinery. The work in thermodynamics consists in the setting of slide valves, indicating engines measuring the brake horse-power, simple engine and boiler tests and the testing of gas and gasoline engines under various conditions. The mechanical laboratory work deals with the efficiency of belts and ropes as well as of several machines of simple construction. An examination of lubricating oils is also made by means of oil testing machines and other well-known devices. Experiments are also made on the balancing of reciprocating and rotating masses.

36. THERMODYNAMICS:—*R. W. Angus.*

Departments 3 and 7, IV Year; 2 hours per week; both terms.

This is a continuation of the introductory course, the subject being here treated from a general standpoint and the idea of entropy and of the absolute scale of temperatures being introduced. The course includes the treatment of saturated and superheated vapours, gases, the flow of fluids, chimney and boiler efficiency and the theory of various engines and other appliances including air compressors, refrigerating machines, and injectors.

Text book:—*Thermodynamics—Peabody.*

36a. THERMODYNAMICS:—*L. M. Arkley.*

Departments 3 and 7, IV Year; 1 hour per week, both terms.

Steam Power Plants. This course follows in logical order the courses on heat engines given in the second and third years. In it a study of the prime movers and auxiliary apparatus required in a power plant is made in such a manner as to indicate the proper choice of equipment under various conditions of operation.

37. THERMODYNAMICS:—*R. W. Angus, L. M. Arkley, J. H. Parkin.*

Departments 3 and 7, IV Year; about 10 hours per week.

The work in this year is a continuation and extension of the work covered in the third year laboratory course. Careful tests are made of engines of various types, such as simple, tandem and cross-compound steam engines; steam turbines; refrigerating machines; air engines; injectors and steam pumps, etc.; and an application is made of Hirn's analysis and the entropy diagram to the results obtained. A complete set of experiments is made on each machine and the result plotted so as to show clearly to the student the effect of various alterations in the adjustment of the engine on the resulting efficiency.

Several modern gas and gasoline engines and a gas producer give ample opportunity for the study of this type of engine, and facilities are provided for sampling the gas supply and exhaust.

Two experimental stacks and three boilers enable results to be obtained on boiler efficiency and chimney draft.

38. STEAM ENGINES:—*L. M. Arkley.*

Departments 3, 7 and 8, II Year; one hour per week; second term.

This course of lectures includes a discussion of the principles of action of the steam engine; also the theory and design of various simple forms of valve gears used in the operation of such engines.

39. HEAT ENGINES:—*L. M. Arkley.*

Departments 3 and 7, III Year; Department 8, IV Year; one hour per week, both terms.

This course in heat engines is intended for students in Mechanical, Electrical and Metallurgical Engineering, to be supplementary to the general course of lectures in thermodynamics.

The principal commercial forms of heat engines are dealt with in a more or less descriptive manner; special attention is given to considerations affecting the design of the ordinary forms of steam engines, gas engines and oil engines.

39a. POWER:—*R. W. Angus, L. M. Arkley.*

Departments 1, 2 and 8, IV Year; 21 hours.

A course of experiments with steam and gas engines, compressed air, etc.

ARCHITECTURE.40. HISTORY OF ARCHITECTURE:—*H. H. Madill.*

Department 4, I Year; one hour per week; both terms.

In this course the development of architecture is treated very briefly and in an elementary manner, from the Pyramids of Egypt to the present, laying special emphasis on the Egyptian, Grecian and Western Asiatic work. The antique Greek and Roman orders are studied, and the students are required to make rendered drawings in the studio of certain orders and elements. An attempt is made to develop the student's sense of proportion, and in the latter part of the second term he is required to study a simple problem in design.

41. HISTORY OF ARCHITECTURE:—*H. H. Madill.*

Department 4, II Year; one hour per week; both terms.

The Classical, Early Christian, Byzantine and Romanesque styles of architecture are studied with the aid of the lantern. The student is required to become acquainted with the best examples in these styles in order that his sense of proportion and his taste may be developed and his knowledge of the different elements extended.

42. HISTORY OF ARCHITECTURE:—*A. Wellesley McConnell.*

Department 4, III Year; one hour per week; both terms.

In this course the work of the previous year is continued, with the study of Gothic and the Renaissance.

43. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*

Department 4, II Year; one hour per week; both terms.

In this course the development of Ornament is traced from the beginning through Egyptian, Assyrian, Grecian, Roman, Byzantine, Romanesque and Moresque styles. An attempt is made to analyze ornament of the best periods and to systematize the principles followed in form and color. The development and types of mouldings are also studied.

44. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*

Department 4, III Year; one hour per week; both terms.

A continuation of the course in Ornament given to the Second Year. Instruction is given in lectures with the aid of the stereopticon. The students are required to become familiar with the characteristics and forms of the ornament used in the Gothic and Renaissance styles.

45. ORDERS OF ARCHITECTURE:—*A. Wellesley McConnell.*

Department 4, II Year; one hour per week; both terms.

Lectures on the Five Orders of Architecture, their affiliated forms and the other elements used in design. Simple problems in elementary design involving the use of the orders and other elements are set from time to time.

46. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, II Year; one hour per week; both terms.

This course is given by means of individual instruction in the classroom by criticisms of the solutions of different problems set during the year and by a series of lectures. It is in this course that the student begins the serious study of design; continued practice in architectural drawing and rendering affords the training necessary to make the student a proficient draughtsman.

47. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, III Year.

Theory and practice of Design.

This course is given by individual instruction in the studio and by lectures. The greater part of the course is devoted to problems in design, and forms a continuation of the course given in the preceding year.

48. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, IV Year.

The entire course is devoted to advanced academic training in designing the more monumental classes of buildings. The student is required to design and submit sketches and working drawings of some subject to be selected by himself.

48a. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, IV Year; Architectural Engineering Option.

A short course of lectures and studio work referring especially to the artistic side of the design of commercial buildings.

49. FREEHAND DRAWING AND WATER COLOR PAINTING:—*C. W. Jefferys*.
 Department 4, I Year; 2 hours per week; both terms.
 Drawing from still life objects. Primary freehand perspective.
 Primary pencil and pen and ink rendering.
- 49a. Department 4, II Year; 2 hours per week; both terms.
 Drawing and monochrome painting from still life.
 Drawing from the cast.
 Pencil, pen and ink, and monochrome rendering.
 Primary water color.
 Drawing from landscape and natural objects.
- 49b. Department 4, III Year; 2 hours per week; both terms.
 Drawing from the cast.
 Water color from still life. Water color rendering.
 Drawing from landscape and natural objects.
 Students who are sufficiently advanced are admitted to the Fourth
 Year Life Drawing Class.
- 49c. Department 4, IV Year; 2 hours per week; both terms.
 Water color from still life and from landscape.
 Drawing from life.
 Water color rendering.
50. MODELLING:—*J. L. Banks*.
 Department 4; I Year; 2 hours per week; both terms.
 The Orders. Synopsis of styles.
- 50a. Department 4; II Year; 2 hours per week; both terms.
 The styles elaborated.
 Problems in figures and in relation to architecture.
- 50b. Department 4; III Year; 2 hours per week; both terms.
 Styles continued.
 Problems, combination of figure, ornament and architecture, and
 their relative values.
- 50c. Department 4; IV Year; 2 hours per week; both terms.
 Modelling from life.
 Anatomy.
 Composition of groups.
51. STRUCTURAL DESIGN:—*C. R. Young*.
 Departments 1 (*Structural Engineering Option*) and 4, IV Year; 1 hour
 per week; both terms.
 This course of lectures is devoted to the problems connected with the
 structural design of buildings of timber, steel and reinforced
 concrete. The various structural elements, such as the floors,
 columns, footings, walls and wind bracing, are fully discussed,
 and portions of typical buildings are designed in the class and
 drafting rooms.

Text books:—Architectural Engineering—Freitag; Steel Construction—Tucker; Structural Details—Jacoby; Architects' and Builders' Pocket Book—Kidder.

52. BUILDING MEASUREMENT:—*C. H. C. Wright.*

Department 4, I Year; 1 hour per week; both terms.

In this course of lectures the principles of measurements and mensuration with special reference to buildings will be discussed. With this is combined $4\frac{1}{2}$ hours per week practice in measurements of existing buildings, quantities, etc.

53. BUILDING MATERIALS:—*C. H. C. Wright.*

Department 4, III Year; 2 hours per week; both terms.

The structural and aesthetic value of the various building materials.

54. SANITARY SCIENCE:—*C. H. C. Wright.*

Department 4, IV Year; 1 hour per week; both terms.

Modern plumbing, its design and installation.

54a. HEATING AND VENTILATING:—*C. H. C. Wright.*

Department 4, IV Year; 1 hour per week; both terms.

The design of different systems, where they should be used, heating specifications, etc.

ASTRONOMY AND GEODESY.

55. ASTRONOMY, ELEMENTARY:—*C. A. Chant.*

Department 1, II Year; 1 hour per week; both terms.

A course in descriptive Astronomy, explaining the ordinary astronomical terms, and describing the various celestial bodies and their motions. In the evenings opportunity will be given for identifying the stars and for observing with telescopes.

Text book:—New Astronomy—D. P. Todd.

56. ASTRONOMY AND GEODESY:—*L. B. Stewart.*

Department 1, III Year; 2 hours per week.

The course of lectures deals with the determination of time, latitude, longitude and azimuth, by methods adapted to the use of the surveyor's transit and the sextant. It is designed to fulfil the requirements of the final examinations for Ontario and Dominion Land Surveyors.

In Geodesy an account is given of the principles and methods of a secondary triangulation survey, also of the principles involved in the North-West system of survey.

Text books:—Practical Astronomy as applied to Geodesy and Navigation—Doolittle; Nautical Almanac, 1919.

57. FIELD WORK:—*L. B. Stewart, S. R. Crerar.*

Department 1, III Year; about 1 hour per week; first term.

The practical work in this subject comprises observations in the field with the transit and sextant for the determination of time, latitude and azimuth by the methods described in the lectures

58. ASTRONOMY (Advanced):—*L. B. Stewart.*

Department 1, IV Year; 2 hours per week.

The lecture course in this subject comprises the theory and adjustment of the instruments used in connection with a geodetic survey; the methods of taking and reducing observations for time, longitude, latitude, and azimuth, with the precision required on such a survey; and other matters relating to these subjects.

59. GEODESY AND METROLOGY:—*L. B. Stewart.*

Department 1, IV Year; 2 hours per week.

The lecture course includes a description of the methods of measuring base lines and the angles of a triangulation; the geometry of the spheroid with applications to geodetic problems; the computation of geodetic positions; the solution of large triangles on the earth's surface, and the adjustment of a triangulation; trigonometric and precise spirit levelling; the determination of the figure of the earth by arc measurements, and by the pendulum; the theory of map projections, etc.

60. ASTRONOMY, GEODESY AND METROLOGY:—*L. B. Stewart.*

Department 1, IV Year; about 23 hours per week.

The practical work in the above subjects includes the observation of meridian transits for time and longitude determinations, and of prime vertical transits for latitude, with the astronomical transit instrument; the observation of meridian zenith distances of stars, and of azimuths at elongation for latitude, with the alt-azimuth; theodolite observations for azimuth; observations for latitude with the zenith telescope; the investigation of the constants of the instruments used, and the reduction of all observations; the measurement of a base line with the steel tape and with invar wires, and the determination of the constants of the tape; the measurement of the angles of a triangulation and the adjustment of the angles of network of triangles, etc.

BIOLOGY.

61. ELEMENTARY BIOLOGY:—*B. A. Bensley.*

Department 5, I Year; 2 hours per week; both terms.

A course of two lectures a week on the principles of biology, as applied to animals. For reference: Bigelow, Applied Biology; Calkins, Biology.

62. ELEMENTARY ZOOLOGY:—*W. A. Clemens.*

Department 5, I Year; 3 hours per week; second term.

An elementary laboratory course on the nature and identification of animal tissues and products, with microscope practice.

63. **ADVANCED BIOLOGY:**—*J. H. Faull.*

Department 5, II Year.

A course of instruction of 3 hours per week, second term, on the Morphology and Physiology of Bacteria, Moulds and Yeast Fungi.

63a. **ELEMENTARY BIOLOGY:**—*E. M. Walker.*

Department 1, IV Year.

An Elementary Course of Laboratory work and demonstrations in General Biology, six hours per week, first term.

64. **BACTERIOLOGY:**—*J. G. Fitzgerald.*

Departments 1, 5 and 6, IV Year; a lecture and laboratory course of 8 hours per week, second term, on elementary bacteriology.

BUSINESS.

65. **ACCOUNTING:**—*W. S. Ferguson.*

All Departments, I Year; 1 hour per week; both terms.

The principles of accounting; illustrated by typical accounts.

66. **BANKING AND FINANCE:**—*M. A. Mackenzie.*

All Departments, II Year; 1 hour per week; both terms.

Money and the instruments of credit; stocks and bonds.

67. **LIMITED COMPANIES:**—*A. R. Clute.*

All Departments, III Year; 1 hour per week; both terms.

Partnerships; the history and development of the limited liability company; the Companies Acts; Company finance.

68. **CONTRACTS AND SPECIFICATIONS:**—*C. R. Young.*

Departments 1 and 4, IV Year; 1 hour per week; second term.

This course of lectures deals with the fundamental principles of contract and specification writing. The critical examination of typical specifications and agreements by the class forms an essential feature of the instruction.

Text books:—Engineering Contracts and Specifications—Johnson; Elements of Specification Writing—Kirby; Specifications and Contracts—Wadell-Wait; Principles of Specification and Agreement Writing—Young.

69. **COST-KEEPING, ETC.:**—*J. W. Bain, H. W. Price, L. M. Arkley.*

Departments 3, 5, 6 and 7, IV Year.

Works management, mechanical specifications, analysis of costs, reports.

70. **COST-KEEPING:**—*H. E. T. Haultain, G. A. Guess.*

Departments 2 and 8, IV Year.

Mining and Metallurgical costs and cost keeping methods, ore contracts, smelter settlements, practical problems.

CHEMISTRY.

75. **ELEMENTARY CHEMISTRY:**—*E. G. R. Ardagh.*
 All Departments, I Year; 2 hours per week; both terms.
 A lecture course in elementary chemistry dealing with the metals and non-metals, with experimental illustrations.
77. **INORGANIC CHEMISTRY:**—*W. H. Ellis.*
 Department 5, I Year; 1 hour per week; second term.
 A lecture course on the elements and important inorganic compounds, supplementing Course 75.
 Text book:—Introduction to General Inorganic Chemistry—Alex. Smith.
78. **INORGANIC CHEMISTRY:**—*L. J. Rogers.*
 Department 5, I Year; about 17 hours per week; both terms.
 A laboratory course of quantitative experiments illustrating the use of the sensitive balance, and confirming the fundamental laws of chemistry; qualitative inorganic analysis; quantitative analysis of pure salts; inorganic preparations; molar weight determinations.
 Text book:—Manual of Chemical Analysis, Qualitative and Quantitative—Newth.
79. **INORGANIC CHEMISTRY:**—*J. W. Bain.*
 Departments 2, 5, 6 and 8, II Year; 1 hour per week; first term.
 A lecture course on the chemistry of the metals; a continuation of Course 75.
80. **ANALYTICAL CHEMISTRY:**—*E. G. R. Ardagh.*
 Departments 5 and 8, II Year; Departments 2 and 6, III Year; 1 hour per week: both terms.
 A lecture course on the principles of chemical analysis; select gravimetric and volumetric methods; technical analysis.
81. **ANALYTICAL CHEMISTRY:**—*E. G. R. Ardagh.*
 Departments 1, 2, 3 and 7, II Year; 6 hours per week; one term.
 Laboratory practice in elementary qualitative and quantitative analysis.
 Text book:—A Smaller Chemical Analysis—Newth.
82. **ANALYTICAL CHEMISTRY:**—*J. W. Bain.*
 Department 2, II Year; 3 hours per week; both terms.
 A laboratory course in the gravimetric determination of metals and acids, with elementary volumetric analysis.
 Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

83. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*

Departments 5 and 8, II Year; 14 hours per week; 17 weeks.

A laboratory course comprising gravimetric and volumetric methods, acidimetry and alkalimetry.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

84. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*

Department 6, II Year; 6 hours per week; both terms.

A laboratory course in qualitative and elementary quantitative chemical analysis; inorganic preparations.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

85. ENGINEERING CHEMISTRY:—*J. W. Bain.*

Departments 1, 2, 3, 5, 6, 7 and 8, II Year; 1 hour per week; second term.

A lecture course consisting of a study of the industrial production and application of heat and light, and of the chemistry of fuel and the products of combustion.

86. INDUSTRIAL CHEMISTRY:—*W. H. Ellis.*

Departments 5 and 6, II Year; 1 hour per week; both terms.

A lecture course on the manufacture of salts, acids, alkalies and inorganic chemicals.

Text book:—Inorganic Chemistry—Thorp.

87. ORGANIC CHEMISTRY:—*M. C. Boswell.*

Departments 1, 2, 3 and 7, II Year; 1 hour per week; first term.

A lecture course in elementary organic chemistry.

Text book:—Theoretical Organic Chemistry—Cohen.

88. ORGANIC CHEMISTRY:—*M. C. Boswell.*

Departments 5 and 6, II Year; 2 hours per week; both terms.

A lecture course dealing with the aliphatic compounds.

Text book:—Theoretical Organic Chemistry—Cohen.

89. ORGANIC CHEMISTRY:—*M. C. Boswell.*

Department 5, II Year; 14 hours per week; 7 weeks.

A laboratory course in organic preparations in the aliphatic series.

90. PHYSICAL CHEMISTRY:—*W. L. Miller.*

Departments 5, 6 and 8, II Year; 2 hours per week; both terms.

A course of lectures on the elements of chemical mechanics, and the theory of solutions.

91. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*

Department 5, III Year; 19 hours per week; 16 weeks.

A laboratory course on the technical analysis of iron and steel alloys, ores, furnace products, ceramic materials, foods, gases, fuels, etc.

92. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Department 6, III Year; 11 hours per week, first term; 13 hours per week, second term.
A laboratory course in volumetric and technical analysis.
93. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Departments 2 and 8, III Year; 5 hours per week; both terms.
A laboratory course on the technical analysis of ores and furnace products.
94. ENGINEERING CHEMISTRY:—*W. H. Ellis and J. W. Bain.*
Departments 1, 2, 3, 5, 6 and 7, III Year; 1 hour per week; both terms.
A lecture course on the application of chemistry to engineering problems; air, water, sewage, the materials of construction, explosives, etc.
95. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, III Year; 1 hour per week; both terms.
A lecture course on petroleum and its products, coal tar and its products, the destructive distillation of wood; fats, oils, soap, sugar, starch, and gums; fermentation industries, etc.
Text book:—Industrial Chemistry—Thorp.
96. CHEMICAL PLANT:—*J. W. Bain.*
Departments 5 and 6, III Year; 1 hour per week; both terms.
A lecture course on the machinery and plant used in chemical manufacturing.
97. ORGANIC CHEMISTRY (A):—*M. C. Boswell.*
Departments 5 and 6, III Year; 2 hours per week; both terms.
A lecture course on the aromatic series.
Text book:—Theoretical Organic Chemistry—Cohen.
98. ORGANIC CHEMISTRY (B):—*F. B. Allan.*
Departments 5 and 6, III Year; 1 hour per week; second term.
A lecture course on stereoisomerism, desmotropism, etc.
99. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 5, III Year; 19 hours per week; 8 weeks.
A laboratory course in organic preparations in the aromatic series; organic analysis.
100. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 6, III Year; 17 hours per week; 4 weeks.
A laboratory course in organic preparations.

101. ELECTROCHEMISTRY:—*W. L. Miller.*

Departments 5, 6, 7 and 8, III Year; Department 2, IV Year; 2 hours per week; first term.

A lecture course on elementary electrochemistry, illustrated by experiments.

102. ELECTROCHEMISTRY:—*W. L. Miller and J. T. Burt-Gerrans.*

Departments 5, 6, 7 and 8, III Year; 3 hours per week; first term.

A laboratory course in quantitative measurements to accompany Course 101.

103. INORGANIC CHEMISTRY:—*J. W. Bain.*

Departments 5 and 6, IV Year; 1 hour per week; first term; 2 hours per week; second term.

A lecture course on chemical theory.

104. ORGANIC CHEMISTRY:—*M. C. Boswell.*

Departments 5 and 6, IV Year; 1 hour per week; both terms.

A lecture course on advanced organic chemistry.

105. ORGANIC CHEMISTRY:—*M. C. Boswell.*

Departments 5 and 6, IV Year.

A laboratory course in advanced organic chemistry.

106. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*

Departments 5 and 6, IV Year; 1 hour per week; both terms.

A lecture course on selected subjects in chemical technology.

107. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*

Departments 5 and 6, IV Year; about 28 hours per week; both terms.

A laboratory course in industrial problems.

108. ELECTROCHEMISTRY:—*J. T. Burt-Gerrans.*

Departments 5, 6 and 7, IV Year; 2 hours per week; both terms.

An advanced lecture course on the theory of solutions and electrolysis, and the application to the practice of electro-deposition and electrolytic refining of metals. The course also includes lectures on the electric furnace with special consideration of efficiency.

Text books:—Electrometallurgy—Borchers; Electrochemistry—Le Blanc; Electrochemistry—Luepke.

109. ELECTROCHEMISTRY:—*W. L. Miller and J. T. Burt-Gerrans.*

Departments 5, 6 and 7, IV Year; about 28 hours per week.

A laboratory course accompanying Course 108.

110. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis.*

Departments 5 and 6, IV Year; 1 hour per week; both terms.

A lecture course on the composition and examination of air, water and food; poisons and their detection.

111. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis*.
Departments 5 and 6, IV Year.
A laboratory course accompanying Course 110.
112. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh*.
Department 2, IV Year, 12 hours per week; first term.
A laboratory course comprising analysis of ores and furnace products.
113. SANITARY CHEMISTRY:—*H. M. Lancaster, E. G. R. Ardagh*.
Department 1, IV Year.
A lecture and laboratory course of about 16 hours per week for one term on water supply, sewage disposal, ventilation, etc.

DESCRIPTIVE GEOMETRY AND DRAWING.

115. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn*.
Departments 1, 2, 3, 6, 7 and 8, I Year; 1 hour per week; both terms.
This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solutions of problems relating to straight lines and planes.
116. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn*.
Department 4, I Year; 1 hour per week; both terms.
This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solution of problems relating to straight lines and planes, special reference being made to the determination of shades and shadows.
117. DRAWING:—*J. R. Cockburn*.
Departments 1, 2, 3, 6, 7 and 8, I Year; about 16 hours per week.
Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; the plotting of original surveys; measured drawings.
118. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell*.
Department 4, I Year; about 15 hours per week.
Copying from the flat, lettering, topography, freehand drawing in black and white, both from copies and models; the graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings. Elements and principles of Architecture.
119. DRAWING:—*J. R. Cockburn*.
Department 5, I Year; about 9 hours per week.
Copying from the flat, lettering, measured drawings.

121. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Departments 1, 2, 3, 7 and 8, II Year; 1 hour per week; both terms.
This course of lectures is a continuation of the work taken in the first year with the following additions: Problems relating to curved surfaces, principles of shades, shadows and perspective.

122. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 4, II Year; 1 hour per week; both terms.
This course of lectures is a continuation of the work taken in the First Year with the addition of problems relating to curved surfaces, shades, shadows and perspective.

123. DRAWING:—*J. R. Cockburn.*

Departments 1 and 2, II Year. Department 1, about 14 hours per week. Department 2, about 7 hours per week; both terms.
Coloring and shading as applied to both topographical and construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

124. DRAWING:—*J. R. Cockburn.*

Departments 3 and 7, II Year; about 15 hours per week; both terms.
Coloring and shading as applied to construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics, theory of mechanism and strength of materials; measured drawings; elementary design.

125. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell.*

Department 4, II Year; about 18 hours per week; both terms.
Freehand drawing including monochrome and colors; exercises from the orders of architecture; principles of shades, shadows and perspective; elementary architectural design; problems in descriptive geometry relating to solids bound by curved surfaces; solution of problems in optics and strength of materials; measured drawings.

126. DRAWING:—*J. R. Cockburn.*

Department 6, II Year.
Same as Department 3, with exception that theory of mechanism is not included.

127. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 1, III Year; 1 hour per week; first term.

This course of lectures deals with spherical projections, the principles of mapmaking, and the graphical solution of spherical triangles.

128. DRAWING:—*J. R. Cockburn, C. R. Young.*

Department 1, III Year; about 12 hours per week.

Principles of mapmaking, spherical projection, plotting of original surveys relating to topographical and railway work; problems in theory of construction; original design of various structures; measured drawings.

129. DRAWING:—*J. R. Cockburn.*

Department 2, III Year; 4½ hours per week.

Plotting of original surveys, relating to topographical and railway work and mining; problems in theory of construction; original design; measured drawings.

130. DRAWING:—*J. R. Cockburn, C. R. Young, A. Wellesley McConnell.*

Department 4, III Year; about 16 hours per week, first term; 22 hours per week, second term.

Advanced work in monochrome and colors; problems in shades, shadows and perspective; architectural design; problems in theory of construction, including framed structures.

131. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 4, III Year; 1 hour per week; first term.

Advanced work in shades, shadows and perspective.

132. DRAWING:—*J. R. Cockburn, C. R. Young.*

Departments 2, 3 and 6, III Year; 3 hours per week; both terms.

Problems in design dealing with the theory of structures.

ELECTRICITY.

135. MAGNETISM AND ELECTRICITY:—*H. W. Price.*

Departments 1, 2, 3, 5, 6, 7 and 8, I Year; 2 hours per week; first term.

A course of lectures on general principles relating to magnetism, electricity, electromagnetism, electrostatics, etc., illustrated largely from engineering apparatus.

136. ELECTRIC CIRCUITS:—*W. S. Guest.*

Departments 1, 2, 3, 5, 6, 7 and 8, I Year; 2 hours per week; second term.

This course of lectures concerns chiefly fundamental principles relating to electric circuits, and leads to consideration of such problems as the distribution of electric energy through lines and networks and the division of load between generators.

137. ELECTRICITY:—*W. S. Guest.*

Department 5, I Year; 3 hours, alternate weeks; both terms.

A laboratory course of experiments, given in logical order, designed to demonstrate fundamental principles in connection with the generation and flow of currents in electric circuits. The work is associated with the lecture courses, magnetism and electricity, and electric circuits (135, 136).

138. ELECTRICITY:—*T. R. Rosebrugh.*

Departments 3, 5, 6 and 7, II Year; 2 hours per week; both terms.

Deals with the theory of electrical measurements, and detailed study of various methods applicable under different conditions in engineering practice to the measurement of resistance, current, potential difference, power and energy; calibration of commercial measuring instruments. The effect of choice of conditions of measurement on the accuracy of the result is considered.

139. ELECTRICAL LABORATORY:—*W. S. Guest.*

Departments 3, 5, 6 and 7, II Year; $2\frac{1}{2}$ hours per week; both terms.

This laboratory course is closely associated with the lecture course 138 on electricity for the second year. The more important and useful methods of testing generators and circuits for electromotive force, resistance, current, grounds, etc., are practised, often under conditions such as occur in practice. The work also includes methods of calibration of measuring instruments for voltage, current, power and energy, and certain studies of properties of incandescent lamps.

140. ELECTRICITY:—*H. W. Price.*

Department 8, II Year; 1 hour per week; second term; Departments 5 and 6, III Year; 1 hour per week; second term; Department 2, III Year; Departments 1 and 4, IV Year; 1 hour per week.

A course designed to fit the requirements of non-electrical students.

A study of essential principles is followed by discussion of electrical apparatus plants, power transmission, railways, etc.

141. POWER:—*H. W. Price.*

Departments 2, 6 and 8, IV Year; 24 hours.

Under the name "Power" a number of operating experiments are arranged to afford some familiarity with measuring instruments and direct and alternating current machinery.

142. MAGNETISM AND ELECTRICITY:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 2 hours per week; both terms.

A course of lectures on theory of magnetism and magnetic circuits, theory of direct current generators, motors, etc.

143. ALTERNATING CURRENT:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 1 hour per week.

A first course of lectures on alternating current, covering principles of measurement and leading to the analytical and graphical treatment of the simpler problems relative to alternating current circuits and machinery.

144. ELECTRICAL LABORATORY:—*T. R. Rosebrugh, H. W. Price.*

Department 3, III Year; 4½ hours per week; Department 7, III Year; 6 hours per week.

This laboratory course is intended to afford the student an opportunity to become familiar with principles involved in continuous current shunt, series and compound wound generators and motors, and, to some extent, alternating current circuits and machinery. Other sections of the work deal with the magnetic properties of iron and steel, and study of iron losses in transformers and generators.

The course is arranged to stand in close relation to the lecture courses in the subjects of magnetism and electricity and alternating current (142, 143) for III Year, and to certain design work (145).

145. ELECTRICAL DESIGN:—*H. W. Price.*

Department 7, III Year; 1 hour per week.

A course of lectures dealing with design of electric machinery and plants, accompanied by designs to be worked out in the design room.

146. ELECTRICAL DESIGN:—*H. W. Price.*

Department 7, III Year.

A design room is set apart for working out designs of electrical apparatus such as transformers, generators, motors, auxiliary apparatus, etc.

Special forms and notes are employed, arranged to suit the various studies. Certain models are provided to assist where necessary.

147. APPLIED ELECTRICITY:—*T. R. Rosebrugh.*

Department 7, IV Year.

This course deals by analytical and vector methods with the theory of alternating current circuits and machinery. Applications of theory are considered with regard to transformers, single and polyphase generators, synchronous motors and rotary converters, induction and commutating series motors, transmission lines, wave analysis, etc.

148. ELECTRICAL LABORATORY;—*T. R. Rosebrugh, H. W. Price.*
Department 7, IV Year, in connection with 147.

This laboratory course involves a thorough study of principles and properties of single and polyphase circuits and apparatus. Both vector and analytical methods are applied to the solution of problems based on tests made on laboratory machines.

The work deals mainly with constant voltage and constant current transformers, single and polyphase alternators, synchronous motors, rotary converters, induction and single phase commutating motors, transmission line, etc. The work does not consist only of factory tests, but is designed to lead the student to apply theory to practice as illustrated in the apparatus under test, with a view to an exact understanding of methods and an appreciation of limitations under many conditions. Free use is made of the oscillograph as a necessary device for "seeing" conditions under investigation. The best commercial measuring instruments are available.

GEOLOGY.

150. GEOLOGY (Elementary):—*A. P. Coleman.*

Departments 2 and 5, II Year; Department 1, III Year; 1 hour per week; both terms.

This course deals chiefly with historical geology with special reference to Canadian formations.

Reference books:—Introduction to Geology—Scott; Text Book of Geology—Dana.

151. ECONOMIC GEOLOGY. (Including Dynamical and Structural Geology):—*A. P. Coleman.*

Departments 2 and 5, III Year; 1 hour per week; first term; 2 hours per week; second term. Department 1, IV Year; 1 hour per week; both terms.

A study of the more important economic rocks, minerals and ores with their geological associations. Special attention paid to Canadian deposits.

152. ADVANCED GEOLOGY:—*A. P. Coleman.*

Department 2, IV Year; 2 hours per week; both terms.

(A) *Pre-Cambrian Geology.*—An account of the Keewatin, Huronian and Laurentian rocks of Canada, with their distribution, structural relations and economic features, and briefer accounts of similar formations in the United States and elsewhere.

Works of Reference:—Reports of the United States and Canadian Geological Surveys, of the Bureau of Mines of Ontario, etc.

- (B) *Pleistocene Geology*.—Lectures on the formation and distribution of the drift deposits of North America, with brief references to other regions. Glacial, Interglacial and Postglacial beds are described, changes of climate are discussed with their probable causes, and the economic features of the clays, sands and gravels are pointed out. A weekly excursion is made during October and November to points of interest near Toronto, which is the centre of the most important development of Pleistocene in America.
- (C) *Physiography*.—A course of lectures on the surface forms of the earth, with the geological factors which have produced them. The broad features of the earth, its plains, tablelands, hills, valleys, mountains, oceans, rivers and lakes are discussed in a general way, methods of topographical surveys and mapping are referred to, and the chief physiographic areas of Canada are described.

153. MINING GEOLOGY:—*A. P. Coleman*.

Department 2, IV Year; 1 hour per week; both terms.

A course of lectures on geological problems associated with mining, typical mining regions in Canada, the United States and elsewhere being discussed from the geological side.

Works of reference:—Mineral Industry and the books mentioned under (A).

154. GEOLOGICAL EXCURSIONS:—*A. P. Coleman*.

Department 2, IV Year.

Trips to points of interest in the vicinity of Toronto.

155. ORE DEPOSITS:—*A. P. Coleman*.

Department 2, III Year; 1 hour per week; both terms.

Discussion of the origin and classification of ore deposits in a general way, the mode of occurrence of the chief metals, and statistics of production, special attention being given to the metals mined in Canada.

156. ECONOMIC GEOLOGY:—*W. A. Parks*.

Department 2, III Year; 2 hours per week; second term.

Laboratory work on ores, manner of occurrence, vein structure, etc. Geological maps of typical mining regions.

MINERALOGY.

157. ELEMENTARY MINERALOGY:—*J. E. Thomson.*

Department 5, I Year; Department 2, II Year; 2 lectures per week; first term.

After introducing the student to the chief chemical, physical and crystallographic characteristics of minerals, the course becomes descriptive and deals with about one hundred of the minerals most important from the industrial or scientific point of view.

Text books:—Minerals and how to study them—Dana; Text Book of Mineralogy—Dana.

158. MINERALOGY:—*J. E. Thomson.*

Department 5, I Year; 4 hours per week, first term; 3 hours per week, second term. Department 8, I year; 1 hour per week; first term.

Introduction to blow-pipe analysis, determination of minerals by inspection and physical tests.

Text books:—Text Book of Mineralogy—Dana; Determinative Mineralogy—Lewis.

159. PRIMARY MINERALOGY:—*A. L. Parsons.*

Department 1, II Year; 2 hours per week; first term.

A very brief introduction to the study of minerals and rocks.

Text books:—Minerals and how to study them—Dana; Handbook of Rocks—Kemp.

160. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 2, II Year; 1 hour per week, first term; 3 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; introduction to blow-pipe practice.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy—Lewis.

161. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 1, II Year; 1 hour per week, first term; 2 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; study of common rock types and their identification.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

162. MINERALOGY:—*A. L. Parsons.*

Department 5, II Year; 1 hour per week; second term.

Introduction to the study of rocks; determination of minerals and rocks by means of tables based on the physical properties.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

163. ELEMENTARY PETROGRAPHY:—*T. L. Walker.*

Department 2, III Year; 1 hour per week.

A course of lectures and laboratory work introducing the student to the macroscopic study of rocks.

Text books:—Handbook of Rocks—Kemp; Rocks and rock minerals—Pirsson.

164. MINERALOGY:—*J. E. Thomson.*

Department 2, III Year; 2 hours per week.

Determination of minerals by means of the blow-pipe and physical properties.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy—Lewis.

165. GENERAL PETROGRAPHY:—*T. L. Walker.*

Department 2, IV Year. 1 hour per week.

Study of the chief rock-forming minerals and of some phases of petrography not covered in the course of the previous year.

166. PETROGRAPHY:—*T. L. Walker.*

Department 2, IV Year; 2 hours per week; both terms.

Study of the chief rock-forming minerals, of rocks in thin sections and in hand specimens.

Text books:—Rocks and Rock Minerals—Pirsson; Minerals in Rock Sections—Luquer.

167. CRYSTALLOGRAPHY:—*A. L. Parsons.*

Department 5, III Year; 1 hour per week.

A course devoted to lectures and practical work on the geometrical and optical properties of crystals, preparing the student for the study of rocks in thin sections and for the examination of crystallized substances, natural and artificial, under the polarizing microscope.

169. MINERALOGY:—*A. L. Parsons.*

Department 8, II Year; 1 hour per week.

Determination of minerals by physical properties.

Text Book:—Mineral Tables—Eakle.

MINING, ASSAYING AND ORE DRESSING.

170. MINING:—*H. E. T. Haultain.*

Department 2, II Year; 1 hour per week; first term. Department 8, II Year; 1 hour per week; both terms.

An introduction to the study of mining and ore dressing methods.

171. MINING AND ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, II Year; 3 hours per week; first term.
Introductory work with rock-drills and various ore dressing appliances.
172. MINING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, III Year; 2 hours' lectures per week, second term; 3 hours' laboratory work per week, second term.
General mining methods.
173. ASSAYING:—*H. E. T. Haultain, J. T. King.*
Departments 2 and 8, III Year; 1 hour lecture per week, first term; 3 hours' laboratory work per week, both terms; Departments 5 and 6, III Year; 1½ hours' laboratory work per week; both terms.
Assaying of various ores for gold, silver, lead and copper.
174. ASSAYING:—*H. E. T. Haultain, J. T. King*
Department 2, IV Year; 1 hour lecture per week, one term; 3 hours' laboratory work per week, one term.
Continuation of the work of III Year.
175. MINING:—*H. E. T. Haultain.*
Department 2, IV Year; 1 hour lecture per week: both terms.
Special mining methods, examinations, reports.
176. MILLING:—*H. E. T. Haultain, F. C. Dyer.*
Department 2, IV Year; 3 hours' laboratory work per week; both terms.
Advanced work with ore dressing appliances, complete mill tests.
177. ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, III Year; 1 hour per week; both terms.
179. ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Department 2, IV Year; 1 hour per week; both terms.

METALLURGY.

180. METALLURGY:—*G. A. Guess.*
Departments 2, 5 and 6, IV Year; 1 hour per week; both terms.
Advanced studies in the metallurgy of gold, silver, copper, lead, nickel, and zinc, metallurgical problems.
181. FERRO-METALLURGY:—*T. R. Loudon.*
Departments 1, 2, 3, 5, 6, 7 and 8, III Year; 1 hour per week; both terms.
The physical properties of iron and steel and the circumstances that influence the strength, etc., of iron. The different modes of manufacture of iron and steel and the effect of different processes of making on the resulting products; explanations of specifications for iron and steel adopted by engineers.

182. METALLURGY:—*G. A. Guess.*

Department 2, IV Year; 6 hours' laboratory work per week; second term.

Calibration of pyrometers, blast furnace smelting and copper converting, cyanidation, acid leaching of copper ores, electrolytic refining of lead and copper, electrometallurgy.

183. METALLURGY:—*G. A. Guess.*

Departments 2, 5, 6 and 8, II Year; 1 hour per week; second term.

An introduction to the study of general metallurgy.

184. METALLURGY:—*G. A. Guess.*

Departments 2, 5 and 6, III Year; 1 hour per week; both terms.

General metallurgy.

185. METALLURGY:—*G. A. Guess.*

Department 8, II Year; 1 hour per week, both terms.

A lecture course in the study of metallurgical fuels, their use, preparation, calorific value and temperature of combustion, introduction to the study of metallurgical processes. Problems.

Two hours' laboratory work, second term.

186. METALLURGY:—*G. A. Guess.*

Department 8, III Year; 1 hour per week; first term; 4 hours per week; second term.

The uses, properties and metallurgy of the metals except iron, with special reference to copper, nickel, lead and zinc. The study of clays and their industrial uses. An additional laboratory course of 100 hours.

186a. METALLURGY:—*G. A. Guess.*

Department 8, IV Year; 2 hours per week, both terms, and 9 hours' laboratory work, both terms.

Lixiviation of copper ores, design and organization of plants, metallurgical book-keeping, metallurgical balance sheets, thermal balance sheets, electrometallurgy, electrolytic refining processes, a particular study of Canadian problems.

MATHEMATICS.

187. ALGEBRA:—*A. T. DeLury.*

Departments 1, 2, 3, 5, 6, 7, 8, I Year; 2 hours per week; both terms.

Simple equations of one, two and three unknown quantities; quadratic equations of one and two unknown quantities; graphic representation of functions and the introduction of the gradient function; proportion and progressions; interest forms and annuities, permutations, combinations, limits, the general theory of infinite series, binomial theorem, exponential and logarithmic series.

Text book:—Intermediate Algebra—DeLury.

188. ANALYTICAL GEOMETRY:—*I. R. Pounder.*

All Departments, I Year; 1 hour per week first term; 2 hours per week second term.

The course in Elementary Analytical Geometry covers the more familiar propositions in connection with the straight line, circle, parabola, ellipse and hyperbola. The subject is treated so as to illustrate the general methods of analytical geometry.

189. TRIGONOMETRY, PLANE:—*M. A. Mackenzie.*

Departments 1, 2, 3, 5, 6, 7, 8, I Year; 2 hours per week; first term.

Solutions of triangles and practical problems.

Text book:—Practical Trigonometry—Plane and Fawdry.

190. CALCULUS, DIFFERENTIAL AND INTEGRAL:—*S. Beatty.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; Department 5, II Year, optional; 2 hours per week; both terms.

This is an elementary course in the infinitesimal calculus, but adequate to afford a knowledge of the character and methods of the subject and to enable students in chemistry, engineering, etc., to understand such of their text books as introduce the calculus.

191. TRIGONOMETRY, SPHERICAL:—*L. B. Stewart.*

Department 1, II Year; 1 hour per week; first term.

A course of lectures includes the derivation of formulæ and their application to the solution of triangles and to practical problems.

Text book:—Spherical Trigonometry—Todhunter and Leatham.

192. LEAST SQUARES, METHOD OF:—*L. B. Stewart.*

Department 1, III Year; 1 hour per week; first term.

The course of lectures includes: The general principles of probability, the law of error, direct measurements of equal and different weights; mean square and probable errors; indirect measurements; conditioned observations; applications to empirical constants and formulæ, etc.

Text book:—Least Squares—Merriman.

ENGINEERING PROBLEMS.

193. Departments 1, 2, 3, 6, 7, 8, I. Year; 1 hour per week; both terms.

In this course the time is devoted to problem work involving an application of the theory and principles laid down in the lecture course of the various subjects of the First Year.

TECHNICAL PHYSICS.

195. ACOUSTICS:—*G. R. Anderson.*

Department 4, III Year.

Wave motion, propagation, reflection and transmission of sounds.

Laws of vibrating strings, pipes and forks. Velocity of sound.

Musical scales. Absorption of sound by various substances, use of deadening material in buildings. Amount of reverberation permissible and desirable in public buildings. Lectures and laboratory work.

196. HYDROSTATICS:—*G. R. Anderson.*

All Departments, II Year.

Laws of fluid pressure and application to machines. Density of solids and fluids, theory of flotation.

Lectures and laboratory work. Spring term.

197. OPTICS:—*G. R. Anderson.*

Departments 1, 2, 3, 5, 6 and 7, II Year.

Rectilinear propagation of light, illumination, photometry, light standards. Distribution of light by reflectors and diffusers, general and selective absorption, economic values of artificial lights.

Laws of reflection and refraction, theory of optical instruments.

Light considered as wave motion, dispersion, spectrum analysis, colour phenomena, polarization.

Lectures and laboratory work, both terms.

197(a). OPTICS AND LIGHTING:—*G. R. Anderson.*

Dept. 4, II Year.

198. HEAT:—*G. R. Anderson.*

Departments 1, 5 and 8, III Year.

Generation and propagation of heat. General and industrial thermometry, calorimetry and pyrometry. Linear and cubical expansion, gas laws. Specific heat of solids, liquids and gases, latent heat of fusion and vaporization. Mechanical equivalent of heat. Carnot cycle.

Lectures and laboratory work, Fall term.

199. PHOTOGRAPHY:—*G. R. Anderson.*

Departments 1 and 4, III Year; Departments 3 and 7, IV Year.

The camera and its adjustments, lenses, shutters, screens. Plates for various purposes, films, prevention of halation. Lighting, exposure, development. Paper of various kinds, printing, enlargement and reduction, blue printing and allied processes. Record photography, photogrammetry and photo-surveying. Photography in colour.

Lectures Fall term, and laboratory work both terms.

200. ILLUMINATION:—*G. R. Anderson.*

Department 4, II Year.

Principles of interior and street illumination. Artificial lighting of public and private buildings, etc.

SURVEYING.

205. SURVEYING:—*S. R. Crerar.*

Departments 1, 2, 3, 6, 7 and 8, I Year; 1 hour per week; both terms.

The lecture course includes the general principles; surveying with the chain, the compass and chain and the transit and chain, and level, the applications of trigonometry to inaccessible heights and distances; mensuration of surfaces and solids, co-ordinate surveying, division of land, etc.

Text books:—Plane Surveying—Tracy; Theory and Practice of Surveying—Johnson and Smith.

206. FIELD WORK:—*S. R. Crerar.*

Departments 1, 2, 3, 6, 7 and 8, I Year; 9 hours per week; first term.

This course comprises testing chains; practice in chaining; a complete survey of a piece of land with the chain and transit; keeping of field notes; the use of the transit and compass in surveying closed figures and traverse lines and in ranging straight lines; plotting by latitudes and departures, and otherwise computing areas. Instrumental work with level.

207. SURVEYING:—*W. M. Treadgold.*

Departments 1 and 2, II Year; 1 hour per week; both terms.

This course of lectures takes up in detail, simple, reverse and compound curves as applied to railroad surveying. It also includes stadia, plane table and photographic surveying as applied to topographic work, and the main features of mine and hydrographic surveying.

Text books:—Henck, Searles, Allen (Field books for Engineers) Theory and Practice of Surveying—Johnson and Smith; Surveying—Breed and Hosmer.

208. FIELD WORK:—*W. M. Treadgold, E. W. Banting.*

Departments 1 and 2, II Year; 9 hours per week; first term.

This course of instruction embraces all adjustments of the transit, minor problems in triangulation and traversing—ordinary and special problems as applied to railroad work in regard to curves, simple, reverse and compound, profile levelling and plotting of profile.

209. SURVEYING AND LEVELLING:—*W. M. Treadgold.*

Department 1, III Year; 1 hour per week; both terms; Department 2, III Year; 1 hour per week; first term.

This course of lectures takes up the work of the railroad engineer on construction, including profiles, cross sectioning, computation of volume of earthwork, overhaul, transition curves, laying out turnouts, frogs and switches, etc.

Also a discussion of trigonometric and barometric levelling.

Text books:—Field Engineering—Searles; Railroad Curves and Earthworks—Allen.

210. FIELD WORK:—*W. M. Treadgold, E. W. Banting.*

Departments 1 and 2, III Year; about 9 hours per week; first term.

This includes adjustments of levels and determination of profile, cross sectioning and computation of earthwork of located line on ground and plotting of same; also cross sectioning by use of hand level. A complete stadia topographic survey is made and plotted. Micrometer work and plane table traverse are also taken up.

ADDITIONAL, FOURTH YEAR OPTIONS.

211. RAILWAY ENGINEERING:—*W. M. Treadgold.*

Department 1, IV Year; about 2 hours per week.

The object of this course is to make the student acquainted with the general principles of railroad and street railway engineering, and the subject will be studied from the standpoint of economic theory of location; train resistance; effect of grade, distance and curvature and rise and fall; maintenance of way; yards and terminals; tunnels, and street railway practice.

212. FIELD WORK:—*W. M. Treadgold.*

Department 1, IV Year; about 11 hours per week; first term.

The work consists of an original survey for a railroad some one or two miles in length, the work being conducted according to the most modern methods of location. Upon the completion of this work a contour map of the district surveyed is plotted in the drafting room and a line adjusted to it. This is staked out in the field, profiles taken and complete estimates of the cost of construction made.

213. SANITARY ENGINEERING.

Sanitary Chemistry (113).

Advanced Biology (63a).

Bacteriology (64).

Re-inforced Concrete (22).

Hydraulics (32b).

Miscellaneous Structures (24a).

*Sanitary Engineering:—*A lecture course of 1 hour per week, both terms, in which consideration is given to the problems of water supply and sewage disposal as viewed by the engineer. Some practice in the design of works from assumed data is afforded.

Reference books:—*Sewage Disposal—Fuller; Public Water Supplies—Turneure & Russell.*

214. HIGHWAY ENGINEERING:—

Department 1, IV Year.

A lecture and laboratory course of about 8 hours per week, dealing with materials, design and construction of highways and pavements and the testing of various materials used in such work.

215. STRUCTURAL ENGINEERING:—

Students in Civil Engineering who desire to specialize in the subjects best fitting them for designing or constructing engineers on bridge-building or other analogous work, may do so by selecting the Structural Engineering Option in the fourth year. In addition to the obligatory subjects, the following lecture and laboratory courses are provided for those selecting this option:

Theory of Structures (16).
Strength and Elasticity of Materials (17)
Iron and Steel (23).
Reinforced Concrete (22).
Structural Design (51).
Mill Building Design (24).
Miscellaneous Structures (24a).

216. ARCHITECTURAL ENGINEERING:—

Architectural students desiring to give special attention to the structural design of buildings may do so by electing to take the Architectural Engineering Option in the fourth year. The following subjects, in addition to those required of all students in the fourth year in Architecture, are required:

Mill Building Design (24).
Architectural Design (48a).

MODERN LANGUAGES.

217. FRENCH:—*J. S. Will, H. S. McKellar.*

Required in Department 4, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

218. GERMAN:—*G. H. Needler.*

Required in Department 5, all years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

THESIS.

219. THESIS.

Required in all Departments, IV Year.

Each student is required to prepare a thesis of between six thousand and seven thousand words on a subject approved by Council. See circular of information.

VACATION WORK.

220. CONSTRUCTION NOTES. See special circular of information.

MILITARY INSTRUCTION.

221. All Departments, all years; 3 hours per week; both terms.

A course is conducted by the Director of Military Instruction, embracing physical drill, squad drill, rifle drill and lectures on military discipline and etiquette. Students physically unfit for this course must take a course in physical training under the supervision of the Physical Director.

OUTLINE OF VACATION WORK

CONSTRUCTION NOTES.

II and III Years.

The construction notes required consist of neat and complete dimensioned sketches in pencil of any structures, machines or plants which may be of interest. Any object chosen should be represented and dimensioned in such a manner that it could be completely constructed from the notes as the only available information.

From students in Department 2, who have been actually engaged during the summer with Government or other approved geological survey parties, geological field notes will be accepted in lieu of construction notes.

MASTER OF APPLIED SCIENCE DEGREE.

1. A candidate for the degree of Master of Applied Science (M.A.Sc.) shall hold the degree of Bachelor of Applied Science (B.A.Sc.) of this University.
2. He shall spend not less than one academic year in attendance as a student, in the Faculty of Applied Science, on a course of study approved by the Council.
3. He shall present a satisfactory thesis on a subject approved by the Council.
4. He shall pass such examinations as the Council may decide.
5. The candidate must register at the beginning of the academic year.

PROFESSIONAL DEGREES.

The attention of graduates is directed to the following regulations respecting professional degrees.

The following degrees have been established: Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem.E.), subject to the following regulations:

1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science or of the Faculty of Applied Science and Engineering or the degree of Bachelor of Applied Science.
2. He shall have spent at least three years after receiving the diploma or the degree in the actual practice of the branch of engineering wherein he is a candidate for a degree.
3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.

4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidate's professional experience for the purpose of clauses 2 and 3.

The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree, the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.

The candidate may be required at the option of the Examiners to undergo an examination in the subject of this thesis.

6. Notice in writing shall be sent to the Secretary not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Examiners.

7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Secretary not later than the first day of April.

8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Examiners.

9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.

10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the University.

LABORATORY EQUIPMENT.

THERMODYNAMIC AND MECHANICAL LABORATORY.

The University in 1909 completed the erection of a large, well-equipped building for the accommodation of the steam, gas, mechanical and hydraulic laboratories. A more complete description of the laboratories has been published elsewhere, so that the present description is only intended to give the main features.

The part of the building set apart for thermodynamics and other mechanical work is the ground floor of a room 60 ft. x 155 ft. This room is lighted entirely from the roof in a very perfect way. A part of the space 40 ft. wide running the entire length of 155 feet is served by a 3-ton travelling crane and contains the following equipment:

50 h.p. Brown engine with separate jackets on both heads and barrel of cylinder.

Two-stage Rand air compressor having compound steam cylinders, each fitted with Meyer cut-off gear. The low pressure air cylinder has Corliss inlet gear.

30 h.p. high-speed Leonard tandem compound engine with shaft governor.

15 h.p. high-speed McEwen engine.

75 h.p. two-line compound Willans engine.

15 h.p. DeLaval turbine with special nozzles for condensing and non-condensing tests.

Two 15 h.p. Leonard engines with different types of valves, which are used for valve setting.

There are also two surface condensers with air pumps so arranged that any engine in the laboratory may be made to exhaust into the atmosphere through an open heater or into one of the condensers, the change from one arrangement to the other being accomplished in a few minutes without the aid of valves.

The laboratory further contains:

A 3 ton York refrigerating machine with tanks.

An Amsler transmission dynamometer.

Apparatus for testing injectors and steam pumps.

Numerous other pieces of apparatus and instruments.

The work on internal combustion engines and producers is performed on the following:

18 h.p. Canada suction gas producer.

14 h.p. National gas engine arranged for various compressions and points of ignition.

10 h.p. Fielding and Platt engine for city gas or coal oil, having various adjustments.

8 h.p. Otto gas engine.

6 h.p. marine gasoline engine.

Ericsson air engine.

Various accessories to above machines.

Steam for the laboratory is supplied by two 50 h.p. and one 100 h.p. Babcock and Wilcox boilers, the latter having an internal superheater. These boilers are located in a separate boiler room. They are used for experimental work only and are fitted up for testing. The gases pass up through two independent chimneys, and these have been arranged so that the draft and other conditions in the chimney at any point of its height may be examined.

In smaller work-rooms off the main laboratory are placed belt and oil testing machines, apparatus for testing the efficiency of gears and machines, and for experiments in the balancing of machinery.

HYDRAULIC LABORATORY.

The hydraulic laboratory occupies two floors each 40 feet x 112 feet, which are well lighted by large windows on the side and end.

The water for the experimental work is pumped through the various pieces of apparatus from a well by means of two turbine pumping units, both of which are driven by a Belliss and Morcom compound engine of 125 h.p. running at a speed of 525 revs. per minute. Both engine and pumps have been installed with a view to using them in experimental work as well as for supply of water for other apparatus used in the laboratory.

The pumping units are capable of delivering one cubic foot of water per second against heads of 250 feet and 300 feet respectively. These units are designed and connected up so that they may be run in series giving the above discharge at 550 feet head, or they may be run in parallel giving double the discharge at a lower head. Each pumping unit consists of two two-stage pumps mounted on a common base and driven by a single pulley, and the construction and piping are such that each two-stage pump may be driven separately or that all may be driven at once, discharging separately one cubic foot per second at about 125 feet head through each of four independent pipes, or else the pumps may be run in series or in parallel. The scheme is thus well adapted to laboratory work, and under the heads used on reaction turbines about six cubic feet per second may be obtained.

The laboratory further contains a large vertical steel tank $5\frac{1}{2}$ feet diameter by 34 feet high with arrangements for the attachment of nozzles and other mouthpieces, etc. Connections are also arranged for reaction turbines, the tank acting as a reservoir.

The discharge from the turbines or nozzles is measured in a weir tank nearly 6 feet wide and 21 feet long, containing a contracted weir $4\frac{1}{2}$ feet wide. This weir may be calibrated by two weighing tanks, each having a capacity of about 240 cubic feet.

There are three reaction turbines and two impulse wheels all ready for experiment, the power being measured by brakes and the water by weir or orifices. Amongst the reaction turbines may be mentioned the one designed and built by Escher Wyss & Co., specially for the laboratory.

Smaller orifice and weir tanks, each about $3 \times 3 \times 12$ feet with necessary measuring tanks, are arranged for instruction in coefficients of various kinds and practice with weirs and orifices.

A Venturi meter and other meters, also an hydraulic ram and similar devices are available for testing, and good facilities have been arranged for investigating friction and other properties of pipes and fire hose.

For special investigations on turbine and centrifugal pumps, other pumps in addition to those already described have been arranged.

The basement of the laboratory contains an open trough 5 feet wide, about 110 feet long, with a large weir at one end. It is intended to use this trough for experiments on the flow in open channels, for measurements of large discharges by means of the weir, and for experiments with current meters and Pitot tubes.

Numerous pieces of smaller apparatus, together with all instruments required, have also been provided, and the laboratory equipment is believed to be very complete.

DONATIONS TO THE THERMODYNAMIC AND HYDRAULIC LABORATORIES.

The following donations to the equipment of the laboratories have been made through the kindness of those mentioned:

50 h.p. Wheeler Surface Condenser, presented by Mr. F. M. Wheeler, New York.

Blake Feed Pump, presented by the manufacturers.

6-inch New American Turbine, presented by Wm. Kennedy & Sons, Owen Sound, Ont.

Two Crown Water Meters, presented by the National Meter Co., New York, through Mr. M. Warnock, Toronto.

Rock Drill, presented by Sullivan Machinery Co., New York, through Mr. A. E. Blackwood, '95.

Marine Gasoline Engine, presented by Canadian Fairbanks Co., Montreal.

Two engines with different types of valve, presented by Messrs. E. Leonard & Sons, London, Ont.

Bundy trap from American Radiator Co., through Messrs. Russell & Gifford.

Dunham steam trap from C. A. Dunham Co.

Sectional models of valves from American Radiator Co.

Sectional model Mason Reducing Valve by Russell & Gifford.

Tanks, etc., by John Inglis Co. Pressure Fan from Sheldons Ltd., Galt.

In addition to the above, other firms have materially assisted by offering apparatus at or below cost price, among whom may be specially mentioned, The Canadian Rand Drill Co., Sherbrooke, Quebec.

PHYSICAL LABORATORIES.

The optical laboratory is equipped with Weinhold optical benches and accessories for determining the constants of mirrors and lenses and for demonstrating the construction and use of telescopes, field glasses, microscopes, etc. There is also an equipment consisting of one or more of the following optical instruments:—field glasses, microscopes, reading telescope, small comparators, spectrometer, various types of photometer, small focometer, cathetometer, polariscope, illuminometer, standard gas light testing bench, projecting lanterns, etc.

The photographic laboratory is supplied with a number of hand cameras for the use of students. There are also larger cameras for Departmental work, copying cameras, enlarging lanterns and a kinematograph camera, printer and projector, electric blue-printing machine and the necessary dark rooms.

The hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balance, Jolly balance, Mohr's balance, hydrostatic press, vacuum pumps.

The heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat, expansion apparatus, air thermometer, apparatus for verification of Boyle's law and pressure and boiling point curve, and for determination of the absolute expansion of mercury, Callendar's apparatus for determination of the mechanical equivalent of heat.

The acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajous' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electropneumatic wind chest and standardized organ pipes and other accessories.

ELECTRICAL LABORATORIES.

Galvanometer laboratory.—The equipment of this laboratory is, in part, as follows: A set of D'Arsonval galvanometers conveniently located at tables about the laboratory, a set of resistance boxes for use with the same; measuring instruments, including ammeters, voltmeters, wattmeters, potentiometers and standard cells. Apparatus for the measurement of low resistance, including a ductor, and for high resistance, including a megger; several Carey Foster outfits and a Roller bond tester. There are also experimental lines for practice in locating faults, photometer outfits with rotating devices and various types of arc lamps.

Another room is fitted more especially for calibration of electrical instruments for alternating and direct currents. About one hundred and twenty portable measuring instruments are available for students' use, also standard instruments, including Weston laboratory standards, Kelvin balances and a Wolff potentiometer, with which the portable instruments may be compared.

Machine laboratory.—This laboratory, occupying two large rooms, contains twenty-five dynamos and motors varying in capacity from two to twenty kilowatts, adapted for experiments illustrating the properties of compound, shunt and series dynamos and motors, arc machines, as well as the use of interpoles. Switch-boards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines.

This laboratory also contains two 15 kw., 25 cycle and two special 15 kw., 60 cycle General Electric polyphase revolving field alternators direct driven by motors, two $7\frac{1}{2}$ kw. alternators, two rotary converters of 10 kw. and 5 kw. capacity, a $7\frac{1}{2}$ kw. General Electric polyphase induction motor with slip ring rotor, Westinghouse three-phase squirrel cage induction motors, Wagner single phase motor and unity power factor motor, Swedish General Electric variable speed motor, Westinghouse single phase series motor, Westinghouse alternator, and several three phase and single phase induction motors; also transformers, reactive coils, and other details, as in the direct current sections of the laboratory described above, for experiments on the properties of alternating currents and alternating current apparatus in general. A constant-current transformer with its load of six series arc lamps, a three-element oscillograph, for studying wave forms, a high potential transformer and a mercury arc rectifier may also be mentioned. The students are supplied with Weston, Westinghouse and Thomson portable instruments for measuring purposes.

A motor generator set has been installed, comprising a 65 h.p. motor driving on the same shaft a 30 kw. 110 volt d.c. generator and a 30 kw. 60 cycle 110 volt alternator with direct connected exciter.

Appliances are also provided for the study of saturation and hysteretic properties of samples of iron and steel, and models for exercise in winding armatures.

High tension room. In a separate room with proper automatic devices for safety to the operator, there is installed a 20 K.W. transformer with a range of voltages up to 200,000 volts. Studies of insulators may be carried out. It is expected that the facilities for measurement of high voltage will shortly be improved by the installation of a sphere gap. Work with high frequency also is in contemplation.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accommodation for 112 students, each working space being supplied with water, gas and fume cupboard. The laboratory for quantitative analysis will accommodate 48 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 36 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. A laboratory for fourth year students with accommodation for eight workers has been fitted up. Each of these laboratories has its own balance room adjoining furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. A calorimeter room has been equipped in the basement. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

ELECTROCHEMICAL LABORATORIES.

The Electrochemical laboratories, which are situated in the Chemistry and Mining building, are provided with special facilities for electrolytic work, including a large storage battery and electroplating dynamo with tanks as well as a good set of apparatus and electrical measuring instruments. The experimental work on electric furnaces is performed in two rooms specially equipped for this purpose with rheostats and switch-board connections to a 120 kw. d.c. generator which supplies the current required.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building. One has a floor space of 17 feet x 47 feet, and the other 28 feet x 37 feet. Adjoining each is a room 15 feet x 11 feet, with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances

set on a concrete pier. Each of the laboratories contains a number of melting holes for crucible fusions, various gas and oil furnaces both for crucibles and muffles, and two large brick muffle furnaces.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 feet x 13 feet) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

METALLURGICAL LABORATORY.

This laboratory is on the basement floor of the Chemistry and Mining Building. The main room has a floor space of 1600 square feet.

Among the larger furnaces included in the equipment of the laboratory are a six hearth Wedge mechanical roasting furnace, the gases from which pass through Cottrell precipitating pipes 12 inches in diameter, and which are served with rectified current at 50,000 volts. There is also a gas fired muffle roasting furnace, a Steele-Harvey tilting furnace, a large resistance furnace for high temperature work, two water jacketed blast furnaces and a copper converter.

The laboratory has several small furnaces of various types. Facilities are provided for pyrometric work, for zinc retorting, for furnace gas analysis, for leaching of ores and for the electrolytic refining and precipitation of metals.

There is a laboratory for the testing of clays equipped with grinding pan, ball mill, presses, gas fired and oil fired kilns.

MILLING AND CONCENTRATING LABORATORY.

A detached building, 72 feet x 70 feet in area, contains the milling and concentrating equipment. It is heated, lighted and supplied with electric power from the central plant, and is divided into two parts. The greater part, with 72 feet x 53 feet floor space, and 22 feet high, contains the milling and concentrating equipment. The machinery for the former operations consists of a five-stamp battery erected on concrete foundations, Challenge ore feeder, amalgamating plates, Wilfley table, a clean-up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. This is driven by a 15-horsepower motor.

The concentrating part consists of a set of five revolving trommels for wet screenings, four three-compartment jigs, a trough classifier delivering three products, and two revolving buddles, Wilfley Slimer, Deister Slimer, Richard's Pulsating Classifier, Richard's Pulsating Jig, a dry sizer, besides experimental apparatus of various kinds for experimenting on the falling rates of ore particles, the settling of slimes, surface tension action in oil and flotation methods, etc. The waste products run to the same settling tanks as the tailings from the stamp battery. The ore is handled by a travelling crawl. All the machinery in this part is driven by electric motors.

The lower floor has been fitted up for lixiviation work with apparatus for the treatment of sands and slimes, different types of filter press, vacuum plant agitators, etc.

The plant throughout is intended mainly for teaching and experimental purposes and is made of such a size that numerous experiments can be carried out on small quantities of ore. Tests can also be made on lots of one to ten tons.

The other part of the milling building with 72 feet x 17 feet floor space and 15 feet high is divided into four separate rooms. The largest of the four rooms has an area of 476 square feet and is devoted to the crushing and pulverizing of the ores preparatory to their treatment in the milling and concentrating room. It is isolated in order to confine the dusty operations as far as possible to this one room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches, platform scales for weighing ore, a jib crane, pulleys, buckets, etc., for handling the rock. An adjoining room contains a 30 h.p. motor for driving the machinery of the crushing department, and storage bins for ore, work bench, etc. Another room with 17 feet x 15 feet floor space is furnished with a magnetic separator of the Rowan-Wetherill type, driven by its own motor.

STRENGTH OF MATERIALS LABORATORY.

This laboratory is intended for the scientific and commercial testing of materials of construction such as iron, steel, timber, concrete and masonry.

It is supplied with the following:

An Emery 50-ton hydraulic machine, built by Wm. Sellers & Co., of Philadelphia, for making tests in tension and compression.

A 100-ton screw power machine, built by Riehle Bros., Philadelphia. It is designed for making tests in tension, compression, shearing and cross-breaking, and will take in posts 12 feet long and beams up to 18 feet in length.

A Riehle 10-ton screw power universal testing machine.

A Riehle 50-ton screw power universal testing machine.

A 15-ton single lever-machine, built by J. Buckton & Co., Leeds, England.

A torsion machine, built by Tinius Olsen & Co., Philadelphia, for testing the strength and elasticity of shafting. This machine will twist shafts up to 16 feet in length and 2 inches in diameter.

A hand power torsion machine of simple mechanical construction, specially designed for the testing of short shafts of a maximum diameter of one inch.

A Riehle transverse testing machine of 5,000 pounds capacity, adapted to specimens up to 48 inches in length.

A Riehle compressometer, with spherical seat attachment for the adjustment of specimens having slightly non-parallel faces. This compressometer will receive specimens up to 10 inches in length.

An Olsen compression micrometer of standard type.

A 20,000 pound Olsen, hand power, wire testing machine, specially fitted for testing wooden columns with both fixed and pivoted ends.

A Riehle abrasion cylinder, built to the standard required by the National Brickmakers' Association, adopted in 1901.

A Berry strain-gauge for spans of 3 inches and 8 inches.

A Nalder dividing engine. This may be used either for the precise division of scales or for the calibration of instruments intended for refined measurements.

A large number of extensometers of the usual degree of precision. These include the Bauschinger, Martens, Unwin, Ames, Riehle, Johnson, Henning (recording) and other types. In addition there are the usual scales, micro-meters, telescopes and reflectors, voltmeters for the determination of metallic contact, and such other appliances as are necessary in the making of precise measurements.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labour. It is also supplied with the necessary appliances for making ordinary repairs and for making apparatus for special experiment and original investigation.

HIGHWAY MATERIALS LABORATORY.

This laboratory is equipped for carrying out investigations in the various materials employed in highway construction and maintenance, and comprises the following:

Page impact machine for testing the toughness of road materials.

Diamond core drill for preparing specimens for the toughness test.

Deval abrasion machine for testing the resistance to wear of road materials.

Cementation testing apparatus (Page type) for determining cementing properties of road materials.

Jaw crusher (Mitchell type) for crushing rock for various tests.

Power driven agitator with sieves for the mechanical analysis of sand, gravel and crushed rock.

The laboratory is also equipped with the appliances necessary for examining physical properties:—volatilization, specific gravity, viscosity, melting point, penetration, ductility, etc., of oils, asphalts, tars and other bituminous mixtures used in road construction and maintenance.

LABORATORY OF ONTARIO BOARD OF HEALTH.

Through the courtesy of the Secretary of the Provincial Board of Health for Ontario the facilities of the excellently equipped laboratory which the Board maintains at Stanley Park have, with certain conditions, been placed at the service of the University for the investigation of problems of interest to the sanitarian and the sanitary engineer. The equipment consists of various types of sewage sedimentation tank, sewage filter, sewage measuring devices, aerators, sterilizing appliances and a complete and representative plant intended for the filtration and sterilization of water by practically all known methods.

CEMENT TESTING LABORATORY.

This laboratory is fitted with all the ordinary moulds, sieves, balances, burettes, steaming and drying tanks, tables, and other appliances necessary in making the usual physical tests of a Portland cement. It is also supplied with completely equipped cabinets for individual work. In addition there are the following:

A 2,000 lb. Riehle machine fitted for either tension or compression.

A 2,000 lb. Riehle shot machine for tension.

A 2,000 lb. Fairbanks shot machine for tension.

A 1,000 lb. Olsen automatic shot machine fitted for tests in either tension or cross breaking.

An Olsen soapstone moist closet of modern design.

METROLOGICAL LABORATORY.

The department of surveying and geodesy is provided with all the ordinary field instruments, such as transits, levels, compasses, micrometers, sextants, planimeters, plane tables, tapes, chains, etc., with which is carried on the instruction in practical field operations as detailed elsewhere.

A small laboratory is also established in the basement of the observatory described below, containing the necessary instruments for the refined measurements of geodetic surveying; as, a standard yard and metre, a Rogers 10-foot comparator, an invar base measuring apparatus, a Kater's pendulum with vacuum chamber, a level trier, micrometer microscopes, etc.

The geodetic observatory in connection with this department is used for the instruction of students of the Fourth Year in taking observations for time, latitude, longitude, and azimuth by the precise methods used in connection with a geodetic survey. It contains a 10-inch theodolite and zenith telescope by Troughton & Simms; an astronomical transit instrument and an 8-inch theodolite by Cooke; two electro-chronographs; a Howard astronomical clock; a Dent sidereal break-circuit chronometer; a wireless receiving instrument; arithmometers, etc.

GEOLOGICAL AND MINERALOGICAL LABORATORIES.

In the Chemistry and Mining building on College Street the University possesses a modern laboratory for Geology and Mineralogy.

Courses are given in laboratory work, especially in personal examination of type sets of rocks, fossils, minerals and crystal models. These laboratory exercises serve to illustrate the introductory didactic instruction.

For the encouragement of pure crystallography the laboratories are supplied with goniometers of the various types, crystal models, appliances for the cutting of oriental crystal sections and for the physical examination of the same. Practical petrography is carried on in rooms provided with type sets of rocks, both macroscopic and microscopic. Advanced students are taught to make thin sections of rocks and fossils and to study them microscopically. For students in Mining a laboratory course in the interpretation of geological maps and sections is provided. Typical mining regions are studied in detail and an opportunity is afforded for the examination of specimens illustrating economic geology.

The laboratory for the preparation of thin sections of rocks, minerals and fossils is provided with electric diamond saws and grinding appliances for the various types of work incidental to the preparation of thin sections and museum material.

A room is also provided for advanced work in cartography and geological surveying.

The departments possess 28 petrological microscopes and 5 of other types, so that it is now possible to provide advanced students with instruments and sets of thin sections for their own especial use. The blowpipe laboratory contains 156 lockers, especially designed for apparatus for students.

LIBRARY.

Rooms have been set apart in the Engineering and the Chemistry and Mining buildings for the housing of such periodicals and other literature of the University Library as is of special interest to the students of this faculty.

The University Library is contained in a building of its own, situated on the east side of the campus, that lies to the south of the Main Building. All students who have paid a library fee to the Bursar of the University are entitled to the privileges of the Library. Besides Reading Rooms the Building contains Departmental Studies, which may be used as study-rooms by honour students in the various branches and in which the Professors hold seminary courses. The Library is opened at 8.45 every morning and remains open until 5.15 in the afternoon (6 p.m. during the second term). Books may not be taken out of the building during the

daytime, but are lent for the night shortly before the hour of closing, to be returned the following morning before 10 o'clock. Books not in general demand may, on special application, be borrowed for a longer period. Failure to return a borrowed book at the proper time and other breaches of the regulations are punishable by fine or suspension from the privileges of the Library.

ROYAL ONTARIO MUSEUM.

Archaeology, Geology, Mineralogy, Palaeontology, Zoology.

Students of the University in all departments are recommended to avail themselves of the privileges of the Museum, which, although under separate control, is intimately connected with the work of the University.

The Museum is open on all week days from 10 a.m. to 5 p.m. The admission is free to the public on Tuesday, Thursday and Saturday. On other days an admission fee of fifteen cents is charged.

By a resolution of the Board of Trustees all regular students of the University may be admitted free on all days of the week by presenting their card of registration.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE UNIVERSITY OF TORONTO.

Officers for 1917-1918.

<i>President</i>	C. E. Macdonald.
<i>Vice-President</i>	K. J. McEachern.
<i>Treasurer</i>	D. K. C. Strathearn.
<i>Corresponding Secretary</i>	J. J. Weicker.
<i>Recording Secretary</i>	A. H. Dingman.
<i>Curator</i>	H. E. Preston.
<i>Fourth Year President</i>	W. L. Sagar.
<i>Third Year President</i>	W. Harman.
<i>Second Year President</i>	C. R. Hill.
<i>First Year President</i>	A. L. Irwin.
<i>Civil Club Representative</i>	F. D. Ellis.
<i>Mining Club Representative</i>	J. G. Shepley.
<i>Electrical Club Representative</i>	R. A. Fraser.
<i>Chemical Club Representative</i>	C. W. Hancock.

The Society meets every second Wednesday during the academic year (except April), beginning with the third Wednesday in October. Papers are read, and discussions are held on engineering subjects. The Society publishes a journal monthly during the year, containing the best papers read at the meetings. A supply department is conducted by the Society, on a co-operative plan, through which instruments, drafting supplies, stationery, etc., may be purchased at a low cost. The Society is divided into five clubs for the purpose of affording a medium of study of matters relating in particular to the different departments of engineering.

THE INDUSTRIAL CHEMICAL CLUB.**Officers for 1917-1918.**

<i>Hon. President</i>	Dean Ellis.
<i>Hon. Vice-President</i>	Prof. J. W. Bain.
<i>Chairman</i>	C. W. Hancock.
<i>Vice-Chairman</i>	W. P. Brodie.
<i>Third Year Representative</i>	A. R. Clarry.
<i>Secretary-Treasurer</i>	H. C. Kerman.
<i>Curator</i>	J. C. Bell.

The object of the Chemical Club is to promote the study of industrial chemistry and chemical engineering. Illustrated lectures, preceded by an informal dinner and a short musical programme, are held fortnightly, and on the following day an excursion is made to industrial chemical concerns located in the city or vicinity.

MECHANICAL AND ELECTRICAL ENGINEERING CLUB,
1917-1918.

<i>Chairman</i>	R. A. Fraser.
<i>Vice-Chairman and Fourth Year Rep.</i>	E. W. McLeod.
<i>Secretary and Third Year Rep.</i>	J. E. Hess.
<i>Treasurer and Second Year Rep.</i>	J. L. Chambers.
<i>Curator and First Year Rep.</i>	H. K. McLean.

The Club meets every Thursday during the academic year for the discussion of papers relating to mechanical and electrical engineering problems.

CIVIL ENGINEERING CLUB, 1917-1918.

<i>Chairman</i>	F. D. Ellis.
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The Club is addressed during the academic year by practising engineers on modern methods and problems in civil engineering.

MINING AND METALLURGICAL ENGINEERING CLUB
1917-1918.

<i>Chairman</i>	J. G. Shepley.
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**ATHLETIC ASSOCIATION (FACULTY)
EXECUTIVE COMMITTEE, 1917-1918.**

<i>Honorary President</i>	Dean Ellis.
<i>President</i>	A. R. Mendizabal.
<i>Vice-President</i>	S. H. Johnston.
<i>Secretary-Treasurer</i>	W. L. Sagar.
<i>Fourth Year Representative</i>	G. P. Pearson.
<i>Third Year Representative</i>	H. Rose.
<i>Second Year Representative</i>	F. R. McDonald.
<i>First Year Representative</i>	H. A. Bysshe.

The Athletic Association has full control over all athletic clubs using the name of the Faculty of Applied Science. The Executive Committee has power to suspend any one from the privileges of membership in the Association for any breach of its regulations, and controls the finances of all athletic clubs in the aforesaid Faculty. The annual membership fee of this Association is fifty cents.

No other moneys are collected for the support of athletics in the Faculty of Applied Science without the sanction of the Executive Committee.

RUGBY FOOTBALL

The Mulock Cup, which was presented by Sir Wm. Mulock, M.A., LL.D. to the University of Toronto Rugby Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

RUGBY FOOTBALL CLUB.

Officers for 1917-1918.

<i>Honorary President</i>	Prof. C. H. C. Wright.
<i>President</i>	M. Samuel.
<i>Manager of team</i>	W. L. Sagar.
<i>Captain of team</i>	F. D. Ellis.

ASSOCIATION FOOTBALL.

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB.

Officers for 1917-1918.

<i>Hon. President</i>	Prof. P. Gillespie.
<i>President</i>	A. R. Mendizabal.
<i>Manager</i>	W. J. Browne.
<i>Captain</i>	A. R. Clarry.

HOCKEY.

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of the late W. T. Jennings, Mem. Inst. C.E.

HOCKEY CLUB.

Officers for 1917-1918.

<i>Honorary President</i>	Prof. L. M. Arkley.
<i>President</i>	A. R. Mendizabal.
<i>Manager of team</i>	G. P. Pearson.
<i>Captain of team</i>	W. B. MacIntyre.

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

<i>Officer Commanding</i>	Major L. L. Anthes.
<i>Captain</i>	Valentine Boyd.
<i>Lieutenant (seconded overseas)</i>	A. J. S. Davidson.
“ “ “	E. Pepler.
“ “ “	L. Drummond.
“ “ “	E. F. Lynn, M.C.
“ “ “	F. A. McGivern.
“ “ “	T. R. Young.
“ “ “	T. R. Loudon.
“ “ “	J. B. Heron.
“ “ “	Hugh Gall.
“ “ “	T. A. Hyam.
“ “ “	J. W. Monds.
“ “ “	R. S. Stone.
“ “ “	H. P. Frid.
“ “ “	H. B. Duthie.
“ “ “	A. L. Mierille.
“ “ “	L. W. Klingner, M.C.
<i>Medical Officer</i>	Major J. W. S. Barton
<i>Chaplain</i>	Capt. T. G. Wallace.

FACULTY OF APPLIED SCIENCE.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Y.M.C.A. of the Faculty of Applied Science was organized January 27th, 1905, and forms an integral part of the University of Toronto Y. M. C. A., which is a Federation of the Associations of the various Colleges and Faculties of the University. The object of the Association is to develop a true Christian manhood and to help the students in whatever way possible.

FACULTY OF APPLIED SCIENCE.

VARSITY REPRESENTATIVES

Local Editor.....W. J. Browne.
Reporter.....C. J. McNamara.

UNIVERSITY OF TORONTO C.O.T.C.

Staff.

Lieut.-Colonel.....W. R. Lang.
Major.....A. D. LePan.
Major.....C. V. Massey.
Adjutant.....G. N. Bramfitt.
Quartermaster.....Lieut. C. H. C. Wright.
Paymaster.....Lieut. T. A. Reed.
Medical Officer.....Capt. J. W. Barton.
Musketry Officer.....Capt. F. B. Kenrick.

Establishment: 12 Companies and 1 half Company.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION.

Directorate.

Honorary President.....R. A. Falconer, D.Litt.
 LL.D.
President.....Prof. M. A. Mackenzie.
Vice-President.....A. W. Macpherson.
Secretary-Treasurer.....T. A. Reed.
Physical Director.....Dr. J. W. Barton.

Directors.

Prof. C. H. C. Wright, Hugh Gall, C. A. Bender, F. X. Burrows, C. E. Macdonald, S. A. Moote.

The Athletic Association is now the paramount body in University athletics and has entire jurisdiction over the athletic clubs using the University name, and over their finances, members and policy, subject to the University authorities. Henceforth no financial agreement can be entered into by any such club without the sanction of the Directorate. No expenditure of any kind in connection with any such club can be made without the written order of the Secretary-Treasurer of the Directorate.

UNIVERSITY OF TORONTO, STUDENTS' ADMINISTRATIVE COUNCIL.

President Engineering Society.....C. E. Macdonald.
Fourth Year Representative and Rec. Sec......W. L. Sagar.
Third Year Representative.....W. Harman.
Second Year Representative.....C. R. Hill.
First Year Representative.....A. L. Irwin.

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the University, at a cost of from four dollars and a half a week upwards for comfortable lodging with board; or rooms may be rented at a cost from one dollar and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

UNIVERSITY RESIDENCES.

By the generosity of Mr. and Mrs. E. C. Whitney and other friends, the University can now offer to some hundred and fifty men the peculiar advantages of residential life and excellent accommodation within its own grounds. The Residence, opened in November, 1908, consists of three Houses situated on the north side of Hoskin Avenue, opening upon a quadrangle, the fourth side of which is formed by Devonshire Place. They stand about two hundred yards to the north of University College and of the University Dining Hall and close to the University Gymnasium and Athletic Field. The buildings are known as the South, East and North Houses.

Each House contains twenty-four single rooms, one single suite, one double room and eleven suites, a suite comprising a study and two bedrooms. A large room in each building, with an open hearth and a library has been set aside as a common room. A lavatory with hot and cold shower baths is provided for every eight men. The buildings are heated by steam and lighted by electricity.

The University supplies the table, chairs, book-case, chiffonier, bed, mattress, pillows, linen and window shades for each room; it is prepared to furnish a drop-light for a nominal rental.

Each occupant is charged \$2.50 room-rent per week, payable to the Bursar four weeks in advance. The charge for each single suite is \$3.50 per week. These charges cover heat, light, house-service, house-laundry, and the use of the telephone. There is no separate dining hall connected with the Residence, but board may be obtained at the adjacent University Dining Hall for \$3.75 per week.

Applications for rooms must be made in writing to the Secretary of the Residence Committee (address the Registrar's Office) and must be accompanied by a deposit of \$5.00. This deposit will be returned if the application be not granted, and will be forfeited if a room is assigned to the applicant and not taken by him, unless notice of his refusal of the room

be received by the Secretary in writing before September 8th. It will be returned in full at the end of the College year if the room key be given back and the room and furniture left in a satisfactory condition. The following principles govern the allotment of rooms: (i) In order to be assigned a room in the Residence, either before or during the session, a student must have obtained standing at the previous spring examination, with not more than *one* condition against him. (ii) The rooms in each House will be distributed proportionately between the various Faculties and Years. (iii) A limited number of rooms will be reserved for members of the incoming First Year until September 18th. (iv) Applications will be considered in order of priority.

The University lays down three general rules, designed to prevent hazing, the use of intoxicants and gambling. The students in each House shall elect a House Committee, which is entrusted by the University with the making and enforcing of any other needed rules and with the maintenance of order. A member of the Faculty resides in each House to act as friend and adviser to the men in residence.

FACULTY OF APPLIED SCIENCE.

REGISTER OF STUDENTS 1917-1918.

First Year.

1 Allen, S. J.....Toronto	3 Hulfish, B.....Toronto
1 Augustine, W. P..Port Colborne	§6 Irwin, A. L.....Toronto
6 Barry, T. M.....Hamilton	7 Johnston, J. W.Uxbridge
1 Beck, K. M....Penetanguishene	3 Kischel, F. W.....Toronto
5 Bell, J. C.....Seaforth	5 Lailey, C. P.....Toronto
2 Berry, E. W.....St. Mary's	3 Laird, C. H.....Hamilton
3 Blue, A. C.....Wallacetown	7 Lawrence, A. M.....Toronto
7 Boye, J. G.....Toronto	7 Lidkea, H. J.....North Bay
3 Bysshe, H. A.....Toronto	1 Lucas, C. H.....Toronto
3 Chaikoff, S.....Toronto	1 McLean, C. H.....Chesley
5 Churchill, J. W.....Toronto	7 McLean, H. K.....Toronto
1 Clarke, J. M. G.Toronto	1 Marsh, E. J.....Grimsby
1 Coulter, W. D....Port Robinson	1 O'Bryan, A. E.....Toronto
3 Crane, H. C.....Toronto	3 Park, R.....Hamilton
7 Doherty, W. A.....Toronto	6 Phillips, J. F.....Toronto
2 Doner, G. B.Stayner	7 Playfair, L.....Lanark
7 Dunton, F. W.Brampton	1 Pratt, D. L.....Midland
3 Eckert, F. R.....London	7 Prendergast, R. M....Toronto
5 Emory, V. H.....Toronto	5 Presgrave, R.Toronto
2 Fawcett, T. S. C...Gravenhurst	7 Queen, G.Stratford
5 File, R. R.....Toronto	1 Reid, G. G.....Toronto
7 Flynn, J. P.Merritton	2 Rolph, E. A.....Toronto
5 Fraser, A. D. R.....Toronto	6 Schierholtz, O.....Elmira
1 Fry, C. N.Chesley	6 Shatz, M. H.....Toronto
6 Gallanough, R.....Toronto	2 Shepard, H. M.....Hamilton
6 Gundy, J. V.....Windsor	3 Shortt, J. E. B.....Toronto
1 Guscott, A. G.....Toronto	7 Sine, W. W.....Gananoque
5 Haberman, W.....Toronto	3 Stafford, M. C.....Toronto
4 Hall, Miss J. M.....Toronto	§1 Stokes, L. V. F.....Sombra
5 Hamilton, C.....Toronto	3 Voaden, V.....St. Thomas
3 Hamilton, J. B., Fort Qu'Appelle, Sask.	5 Walters, H. E.....Benmiller
1 Hannan, B. T.....Toronto	5 Weelands, J. E...Owen Sound
6 Harrison, D. R.....Tamworth	3 West, T. M.....Toronto
1 Hayman, H. G.....London	7 Wilson, A. S.....Woodstock
2 Henderson, G. C.....Tara	6 Wingfield, A. H.....Hamilton
7 Hepburn, G.....Milton West	2 Wyllie, W. J. E., Kamloops, B.C.

Second Year.

1 Armstrong, C. G. R...Merlin	7 Brace, G. A.....Brockville
1 Baker, G. H.....Toronto	3 Chambers, J. L.St. Mary's
1 Bennett, G. C.....Midland	§1 Cockerline, E. W.....Toronto
§1 Black, W. G.....Midland	6 Cody, H. B.....Hamilton
1 Bowman, N.....Kitchener	6 Dingman, A. H.....Toronto

§ Withdrew during the session for military service.

§3 Duncan, T. W.....Mooretown	7 McLellan, J. D.....Toronto
§3 Dunn, E. A.....Chatham	3 McNaughton, L. T.....London
7 Eley, F. C.....Toronto	7 Mitchell, M. H. .South Oshawa
6 Emery, F. H.....Toronto	1 Pinel, W. G.....Toronto
6 Faill, J.....Stratford	7 Preston, H. E.....Midland
5 Hambleton, A.....Toronto	7 Pullan, E.....Toronto
§7 Henry, S. E.....Stratford	5 Sale, C. P.Sandwich
§7 Herold, W. H.....Shakespeare	1 Salisbury, E. A.....Toronto
7 Hill, C. R.....Weston	2 Skinner, J. C. E.....Bradford
3 Keenleyside, R. D.....London	6 Soehner, H. C.....Stratford
4 Kentner, Miss M.....Toronto	7 Stewart, A. L.....Kirkton
6 Kerman, H. C.....Toronto	7 Welsman, T. S.....Toronto
7 Landsberg, M.....Toronto	7 Wilson, A. E.Port Perry
3 McDonald, F. R.....Toronto	2 Wilson, R. H. .Sault Ste. Marie
6 McLean, B. M.London	

Third Year.

6 Brodie, W. P.....Toronto	3 Lesperance, L. J.....Essex
7 Brown, W. D. .Forester's Falls	4 McAvoy, O. H.Stouffville
1 Browne, W. J. .St. John's, Nfld.	1 McEachern, K. J.....Alvinston
3 Campbell, T. W. .Smith's Falls	7 McNamara, C. J.....Drayton
1 Cavana, E. L.....Orillia	1 MacIntyre, W. B.....Belmont
6 Clarry, A. R.Locust Hill	1 MacNicol, N.....Humber Bay
1 Cowan, E. C. .Thornhill, Man.	4 Mollard, W. A.....Toronto
7 Durand, R.....Toronto	1 Paterson, E. L.....Blantyre
7 Harkins, J. M.....Toronto	7 Reid, W. M.....Vinemount
1 Harman, W.....Zephyr	7 Rose, H.Sarnia
7 Hess, J. E.Zurich	1 Strathearn, D. K. C....Midland
1 Hopper, G. H.....Toronto	7 Tennyson, A. L.....Port Perry
§1 Irvin, W. F.....Toronto	§1 Ure, D. G.....Woodstock
7 Jenkins, C. F.Thamesford	3 Weicker, J. J.Tavistock
1 Johnston, S. H.Burgessville	

Fourth Year.

6 Anderson, C. C.....Windsor	1 Mendizabal, A. R., Oruro, S. America
7 Ballinger, J. G.Streetsville	1 Mitchell, R. C.....London
7 Duff, C. K.....Hamilton	7 Orr, W. H.....Toronto
1 Ellis, F. D.....Toronto	1 Pearson, G. P.....Schomberg
1 Fairclough, H. W. J...Hamilton	3 Robertson, W. D.....Toronto
7 Fraser, R. A.....Toronto	1 Rovsky, J.....Toronto
6 Hancock, C. W.....Hamilton	1 Sagar, W. L.....Toronto
7 Hyman, B.Toronto	1 Samuel, M.....Toronto
7 Johnston, F. E.....Mull	1 Scott, C. R.....North Bay
1 McDonald, N. G....Sunderland	2 Shepley, J. G.....Amherstburg
7 McLeod, E. W.Embryo	7 Wootton, W. G.....London
2 Macdonald, C. E.....Toronto	
1 Maddock, C. O.Inwood	

§ Withdrew during the session for military service.

**Students of other Faculties taking Instruction in Assaying,
Surveying, etc.**

Macallum, A. B.....	Toronto
Macallum, A. D.....	Toronto

Summary.

First Year Students	72
Second Year Students.....	39
Third Year Students.....	29
Fourth Year Students.....	24
Students of Other Faculties.....	2
	<hr/>
	166

Scholarship.

Awarded by the Boiler Inspection and Insurance Co. of Canada for General Proficiency in the Third Year in Mechanical Engineering.

1912. A. S. Anderson	1915. L. L. Youell
1914. C. G. Davey	1916. A. M. Snider
1913. E. D. W. Courtice	1917. W. D. Robertson

Degree of Master of Applied Science (M.A.Sc.).

1915. Avery, C. R.	1915. Parkinson, N. F.
1916. Dobson, W. P.	1915. Robertson, C. S.
1914. Murdie, W. C.	1915. Rolfson, O.
1916. Parker, G. C.	1915. Treloar, G. E.

PROFESSIONAL DEGREES AWARDED SINCE 1910.**Degree of Civil Engineer (C.E.).**

1915. Bennett, G. A.	1913. Marrs, C. H.
1915. Challies, J. B.	1915. Smith, A.
1913. Dallyn, F. A.	1917. Smith, W. C.
1915. Davison, A. E.	1915. Stayner, D. S.
1914. Gillespie, P.	1911. Swan, W. G.
1914. Hill, S. N.	1917. Taylor, Thos.
1914. Hogg, T. H.	1917. Townsend, C. J.
1913. James, E. A.	1916. Watson, M. B.
1916. Johnston, C.	1914. Young, C. R.
1916. Johnston, J. T.	

Degree of Mining Engineer (M.E.).

1912. Burwash, L. T.	1910. McMillan, J. G.
1915. Campbell, A. D.	1915. Neilly, B.
1913. Forbes, D. L. H.	

Degree of Mechanical Engineer (M.E.).

1916. Acres, H. G.	1913. Darling, E. H.
1915. Campbell, A. M.	1913. Manson, G. J.
1913. Christie, A. G.	1913. Smart, R. S.

Degree of Electrical Engineer (E.E.).

1913. Mitchell, P. H.	1914. Sara, R. A.
1915. Palmer, C. E.	

GRADUATES.

Graduates are requested to inform the Secretary of changes in their addresses.

1881.

1. J. L. MORRIS, C.E., O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.

1882.

1. D. JEFFREY, Windsor, Missouri
Contractor.
1. J. H. KENNEDY, C.E., O.L.S., Vancouver, B.C.
Chief Engineer, Great Northern Ry.
1. J. McAREE, B.A.Sc., D.T.S. (deceased).

1883.

1. D. BURNS, O.L.S., A.M. Can. Soc. C.E. (deceased).
1. G. H. DUGGAN, M. Can. Soc. C.E., Lachine, Que.
Vice-President and Chief Engineer, Dominion Bridge Co., Ltd.
1. J. W. TYRRELL, C.E., D.L.S., Hamilton, Ont.
Tyrrell & MacKay, Consulting Engineers and Surveyors.

1884.

1. W. C. KIRKLAND (deceased).
1. J. McDUGALL, B.A. (deceased).
1. A. R. RAYMER, Pittsburgh, Pa.
Assistant Chief Engineer, P. & L. E. Ry.
1. JAMES ROBERTSON, O.L.S., Toronto, Ont.
Commissioner, The Canada Co.
1. E. W. STERN, M. Am. Soc. C.E.,
On Overseas Service.

1885.

1. J. F. BLEAKLEY, Bowmanville, Ont.
Civil Engineer.
1. H. J. BOWMAN, D. & O.L.S., M. Can. Soc. C.E., Kitchener, Ont.
Bowman & Connor.
1. E. E. HENDERSON, O.L.S., Henderson P.O., Me.
Civil Engineer.
1. B. A. LUDGATE, O.L.S., Pittsburgh, Pa.
Assistant Engineer, P. & L. E. Ry.
1. O. McKAY, O.L.S., Walkerville, Ont.
Civil Engineer and Surveyor.

1886.

1. A. M. BOWMAN, D.L.S., Pittsburgh, Pa.
Pennsylvania Contracting Co.
1. E. B. HERMON, D. & O.L.S., Vancouver, B.C.
Assistant Engineer Vancouver Power Co.
1. ROBERT LAIRD, O.L.S., Haileybury, Ont.
Laird & Routley, Engineers and Surveyors.
1. T. KENNARD THOMSON, D.Sc., C.E., M. Can. Soc. C.E., M. Am. Soc. C.E.,
Consulting Engineer. Hudson Terminal Building, New York
1. H. G. TYRRELL, C.E., A.M. Can. Soc. C.E.,
Consulting Engineer. 817 Hinman Ave., Evanston, Ill.

1887.

1. J. C. BURNS (deceased).
1. A. E. LOTT, Los Angeles, Cal.
Consulting Railway Engineer.
1. A. L. McCULLOUGH, O.L.S., B.C.L.S., A.M. Can. Soc. C.E., Nelson, B.C.
Engineer and Surveyor.
1. F. MARTIN, M.B., O.L.S.,
Physician.
1. C. H. PINHEY, D. & O.L.S., 110 Wellington St., Ottawa, Ont.
1. J. ROGERS, O.L.S., Mitchell, Ont.
Town Engineer.

1888.

1. J. F. APSEY, O.L.S., 3 N. Calvert St., Baltimore, Md.
Assistant Division Engineer, Baltimore Sewerage Commission.
1. W. T. ASHBRIDGE, C.E., 1444 Queen St. E., Toronto, Ont.
Engineer and Surveyor.
1. EDWARD F. BALL, A.M., Can. Soc. C.E.,
335 Madison Ave., New York, N.Y.
*Chief Assistant Engineer of Resurveys, Land and Tax Department,
N. Y. Central and Hudson River Railroad.*
1. D. B. BROWN, O.L.S., Quebec, P.Q.
Locating Engineer, Transcontinental Ry. (G.T.P.)
1. C. M. CANNIFF,
On Overseas Service.
1. H. J. CHEWETT, B.A.Sc., C.E., A.M. Can. Soc. C.E.,
Cold Ash, Newbury, England
1. J. GIBBONS, D. & O.L.S., Ottawa, Ont.
Surveying Staff, Department of Interior.
1. R. McDOWALL, O.L.S., C.E., A.M. Can. Soc. C.E., Owen Sound, Ont.
Town Engineer.
1. G. W. MCFARLEN, O.L.S., Toronto, Ont.
City Engineer's Staff.
1. C. J. MARANI, Anacortes, Wash.
Designing and Consulting Structural Engineer for the Russia Cement Co.
1. G. R. MICKLE, B. A., Toronto, Ont.
Mine Assessor, Province of Ontario.
1. J. H. MOORE, O.L.S., Smith's Falls, Ont.
Town Engineer.
1. G. H. RICHARDSON, 21 Dunvegan Rd., Toronto, Ont.

1888—Continued.

1. K. ROSE, Curry Bldg., Toronto, Ont.
Manager, Evans Rotary Engine Co. of Canada.
1. J. E. ROSS, D. & O.L.S., Kamloops, B.C.
Surveying Staff, Department of Interior.
1. C. H. C. WRIGHT, B.A.Sc., Toronto, Ont.
Professor of Architecture, University of Toronto.

1889.

1. B. CAREY, Toronto, Ont.
1. W. J. CHALMERS, Vanport, Beaver Co., Pa.
1. W. J. CHALMERS, 13012 104th Ave., Edmonton, Alta.
Consulting Engineer.
1. W. A. CLEMENT, M. Can. Soc. C.E., South Vancouver, B.C.
Municipal Engineer.
1. G. F. HANNING, Toronto, Ont.
Divisional Engineer, C.N.R.
1. H. E. T. HAULTAIN, C.E., Asso. Mem., I.C.E., M.I.M.M., M. Can. Soc. C.E., Toronto, Ont.
Professor of Mining Engineering, University of Toronto.
1. J. IRVINE (deceased).
1. D. D. JAMES, B.A., B.A.Sc., 6 Leuty Ave., Toronto, Ont.
Surveyor.
1. F. X. MILL (deceased).
1. H. K. MOBERLEY, D. & S.L.S., Yorkton, Sask.
District Engineer and Surveyor.
1. T. R. ROSEBRUGH, M. A., Toronto, Ont.
Professor of Electrical Engineering, University of Toronto.
1. T. WICKETT, M.D., 25 Nightingale St., Hamilton, Ont.
Physician.

1890.

5. W. E. BOUSTEAD (deceased).
1. F. M. BOWMAN, O.L.S., C.E., Pittsburgh, Pa.
Blaw Steel Const. Co.
1. M. A. BUCKE, M.E. (deceased).
1. G. D. CORRIGAN (deceased).
1. J. A. DUFF, B.A. (deceased).
1. A. B. ENGLISH (deceased).
1. N. L. GARLAND, 76 Wellington St. W., Toronto, Ont.
1. J. HUTCHEON, O.L.S., Parliament Bldgs., Toronto, Ont.
Dept. of Lands, Forests and Mines.
1. W. L. INNES, O.L.S., C.E., Simcoe, Ont.
Manager, Dominion Cannery, Ltd.
1. E. B. MERRILL, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E. Toronto, Ont.
Engineer, H.E.P.C.
1. J. R. PEDDER (deceased).
3. R. A. ROSS, E.E., 80 St. Francois Xavier St., Montreal, Que.
Consulting Electrical and Mechanical Engineer.
1. T. H. WIGGINS, O.L.S., Saskatoon, Sask.
Civil Engineer and Dom. Land Surveyor.
1. W. J. WITHROW (died while on Active Service, 1917).

1891.

1. H. J. BEATTY, O.L.S., Pembroke, Ont.
Engineer and Surveyor.
1. T. R. DEACON, O.L.S., M. Can. Soc. C.E., Winnipeg, Man.
President and General Manager, Manitoba Bridge & Iron Works, Ltd.
1. C. W. DILL, M. Can. Soc. C.E., Winnipeg, Man.
General Manager, The National Paving Co.
5. O. S. JAMES, B.A.Sc., 6 Leuty Ave., Toronto, Ont.
1. A. LANE (deceased).
1. J. E. McALLISTER, B.A.Sc., C.E., Hamilton, Ont.
Gen. Mgr. National Steel Car Co.
3. E. B. MERRILL, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E., Toronto, Ont.
Engineer, H.E.P.C.
1. J. E. A. MOORE, C.E., Cleveland, O.
Marani & Moore, Civil and Mechanical Engineers.
1. W. NEWMAN, O.L.S., A.M., Can. Soc. C.E. Winnipeg, Man.
Consulting Engineer and Contractor.
1. J. K. ROBINSON (deceased).
1. W. B. RUSSEL, 601 Standard Bank Bldg., Toronto, Ont.
Civil Engineer and Contractor.
1. G. E. SILVESTER, O.L.S., M. Am. Inst. M.E., Copper Cliff, Ont.
Chief Engineer, Canadian Copper Co.
1. H. D. SYMMES, Niagara Falls S., Ont.
Engineer and Contractor.

1892.

1. J. R. ALLAN, O.L.S., Renfrew, Ont.
1. T. H. ALISON, B.A.Sc., C.E., Bayonne, N.J.
Secretary and Chief Engineer, Bergen Point Iron Works.
1. A. G. ANDERSON, Port Dover, Ont.
Hardware Merchant.
1. C. FAIRCHILD, D. & O.L.S., 608 Tegler Blk., Edmonton, Alta.
Consulting Engineer and Surveyor.
1. J. B. GOODWIN, B.A.Sc., Niagara Falls, Ont.
Works Engineer, H.E.P. Development.
4. C. E. LANGLEY, Continental Life Bldg., Toronto, Ont.
Langley & Howland, Architects.
1. A. T. LAING, B.A.Sc., Toronto, Ont.
Secretary and Assistant Professor, Faculty of Applied Science, University of Toronto.
1. E. J. LASCHINGER, B.A.Sc., M.E., Johannesburg, Transvaal, S.A.
Hydraulic and Air Power Engineer, Central Mining and Investment Corporation.
5. W. L. LAWSON, B.A.Sc., Billings, Mont.
Asst. Gen. Manager, Great Western Sugar Co.
3. W. A. LEE, B.A.Sc. (deceased).
1. B. McENTEE, B.A.Sc., 28 Queen St. E., Toronto, Ont.
Stationer.
3. C. G. MILNE, B.A.Sc. (deceased).
1. CHAS. H. MITCHELL, B.A.Sc., C.E., M. Can. Soc. C.E., M. Am. Soc. C.E., Lieut.-Col.,
On Overseas Service.
1. N. L. PLAYFAIR, Vancouver, B.C.
1. J. M. PRENTICE (deceased).
1. J. A. ROSS, Cleveland, Ohio
Designer L. S. & M. S. Railway, Engineering Office.

1892—Continued.

1. ALBERT N. SMITH, Youngstown, Ohio
Engineer, Wm. B. Pollock Co.
1. R. W. THOMSON, B.A.Sc., M.E., Kamloops, B.C.
Dist. Engineer.
3. A. V. WHITE, M.E., Ottawa, Ont.
Engineer, Commission of Conservation.

1893.

1. A. G. ARDAGH, Barrie, Ont.
Land Surveyor and Civil Engineer.
- 4.*H. F. BALLANTYNE, B.A.Sc., 2 West 47th St., New York, N.Y.
Architect.
1. G. L. BROWN, O.L.S., A.M. Can. Soc. C.E., Morrisburg, Ont.
Civil Engineer and Land Surveyor.
- 1.*L. C. CHARLESWORTH, D.L.S., Edmonton, Alta.
Deputy Minister of Public Works.
1. T. H. DUNN, O.L.S., D.L.S., M. Can. Soc. C.E. Ottawa, Ont.
Water Power Branch Dept. of the Interior.
1. J. M. R. FAIRBAIRN, P.L.S., Westmount, Que.
Assistant Chief Engineer, C. P. R.
- 4.*W. FINGLAND, 334 Portage Ave., Winnipeg, Man.
Architect.
1. C. FORRESTER, Toronto, Ont.
- 1.*WALTER J. FRANCIS, C.E., M. Can. Soc. C.E., M. Am. Soc. C.E.,
260 St. James St., Montreal, Que.
Walter J. Francis & Co., Consulting Engineers.
- 3.*A. R. GOLDIE, Galt, Ont.
Manager, Goldie & McCulloch Co.
3. S. C. HANLY, Midland, Ont.
Midland Iron Works Co.
- 4.*J. KEELE, A.M., B.A.Sc., Ottawa, Ont.
Ceramic Engineer, Dept. of Mines.
1. J. T. LAIDLAW, B.A.Sc., M.E., Cranbrook, B.C.
Consulting Mining Engineer.
3. F. L. LASH, Bandoeng, Java
Manager, Electrical Supply Co., Board of Trade Building.
1. A. L. McALLISTER, B.A.Sc.,
On Overseas Service.
1. T. J. McFARLEN, Port Arthur, Ont.
Chemist, Antikokan Iron Co.
1. A. J. McPHERSON, B.A.Sc., D.L.S., Regina, Sask.
Deputy Minister of Public Works for Sask.
1. A. F. MACALLUM, B.A.Sc., C.E., Ottawa, Ont.
Commissioner of Works.
1. W. T. MAIN, Silverton, Oregon
Division Engineer, C. & N. W. Ry.
1. V. G. MARANI, C.E., Cleveland, Ohio
Marani & Moore, Civil and Mechanical Engineers.
1. W. MINES, B.A.Sc., Chicago, Ill.
Mechanical Engineer, Hoover & Mason.
- 3.*J. M. ROBERTSON, Montreal, P.Q.
Consulting Engineer.

*Diploma with honours.

1893—Continued.

1. R. K. RUSSEL, 1001 Traders' Bank Bldg., Toronto, Ont.
Railway Contractor.
- 1.*F. N. SPELLER, B.A.Sc., Pittsburgh, Pa.
Metallurgical Engineer, National Tube Co.
1. H. R. SQUIRE, B.A.Sc., O.L.S. (deceased).
1. W. V. TAYLOR, O.L.S., A.M. Can. Soc. C.E., Quebec, P.Q.
Quebec Harbour Commissioners.
- 1.*R. B. WATSON (deceased).

1894.

- 3.*R. W. ANGUS, B.A.Sc., Toronto, Ont.
Professor of Mechanical Engineering, University of Toronto.
1. H. F. BARKER, Toronto, Ont.
1. A. T. BEAUREGARD, B.A.Sc., Darien, Conn.
1. A. E. BERGEY, Pittsburgh, Pa.
Assoc. Professor, Carnegie Inst. of Technology.
3. D. G. BOYD, Toronto, Ont.
Department of Lands and Mines, Parliament Buildings.
3. W. A. BUCKE, Toronto, Ont.
District Manager, Canadian General Electric Co.
1. J. CHALMERS, O.L.S., A.M. Can. Soc. C.E., Edmonton, Alta.
Consulting Engineer, 13012 104th Avenue.
- 4.*J. A. EWART, B.A.Sc., 415 Booth Bldg., Ottawa, Ont.
Architect.
3. W. J. HERALD, B.A.Sc., 190 Whitney Ave., Sydney, N.S.
3. H. E. JOB, B.A.Sc., Hamilton, Ont.
Manager, Toronto and Hamilton Electric Co.
1. S. M. JOHNSON, B.A.Sc., B.C.L.S.
On Overseas Service.
3. A. C. JOHNSTON, B.A.Sc., M.E., Philadelphia, Pa.
Vice-President and Chief Engineer, The J. M. Dodge Co.
1. J. E. JONES, Toronto, Ont.
Street Cleaning Dept., City Hall.
3. N. M. LASH, Montreal, P.Q.
Chief Engineer, Bell Telephone Co.
- 1.*A. L. McTAGGART, B.A.Sc., 703 Arch St., Pittsburg, Pa.
Mechanical Engineer.
- 3.*W. MINTY, B.A.Sc., Blackburn, Eng.
With Messrs. Yates & Thom, Ltd., Engineers.
3. C. J. NICHOLSON, Hamilton, Ont.
Assistant Engineer, Toronto, Hamilton & Buffalo Ry.
1. H. ROLPH, Montreal, Que.
Chief Engineer, John S. Metcalf Co., Ltd.
1. J. D. SHIELDS, B.A.Sc., Toronto, Ont.
Sewer Engineer, Staff of City Engineer.
1. ANGUS SMITH, C.E., O.L.S., A.M. Can. Soc. C.E., Prince Albert, Sask.
City Engineer.
3. A. K. SPOTTON, Galt, Ont.
Chief Engineer, Goldie & McCulloch Engine Works.
3. R. T. WRIGHT, B.A.Sc., East Pittsburgh, Pa.
Engineering Department, Westinghouse Machine Co.

*Diploma with honours.

1895.

1. J. ARMSTRONG, B.A.Sc., LePas, Man.
Chief Engineer of the Hudson Bay Ry.
3. A. E. BLACKWOOD, 30 Church St., New York
Manager New York Office, Sullivan Machinery Co.
1. E. J. BOSWELL, D.L.S., Montreal, Que.
With C. P. R.
3. G. BREBNER (deceased).
3. W. M. BRODIE, B.A.Sc.,
On Overseas Service.
3. L. L. BROWN, The Woolworth Bldg., New York
Vice-President, The Foundation Co.
4. R. J. CAMPBELL, Chicago, Ill.
Artist, Chicago Tribune.
3. A. W. CONNOR, B.A., C.E., 36 Toronto St., Toronto, Ont.
Bowman & Connor, Consulting Engineers.
1. J. S. DOBIE, B.A.Sc., O. & D.L.S., Thessalon, Ont.
President, O. L. S. Assoc.
1. F. W. GUERNSEY, Trail, B.C.
Consolidated Mining and Smelting Co.
- 4.*A. H. HARKNESS, B.A.Sc., Confederation Life Bldg., Toronto, Ont.
Consulting Structural Engineer, Harkness & Oxley,
3. H. S. HULL, B.A.Sc., Johnstown, Pa.
Structural Drawing, Cambria Steel Co.
- 3.*J. MCGOWAN, B.A., B.A.Sc., Toronto, Ont.
Professor of Applied Mechanics, University of Toronto.
3. W. N. MCKAY, Georgetown, Ont.
Manager of Bank of Hamilton.
- 3 H. L. MCKINNON, B.A.Sc., Cleveland, Ohio
Brown Hoisting Machinery Co.
1. W. W. MEADOWS, D. & O.L.S., Maple Creek, Sask.
Department of Public Works.
1. F. J. ROBINSON, D. & O.L.S. (deceased).
3. F. T. STOCKING, Toronto, Ont.
Hydro-Electric Commission.
3. R. C. C. TREMAINE, B.A.Sc. (deceased).

1896.

- 2.*J. W. BAIN, B.A.Sc., Toronto, Ont.
Professor of Chemical Engineering, University of Toronto.
2. L. T. BURWASH, M.E.,
On Overseas Service.
- 3.*G. M. CAMPBELL, Lynn, Mass.
Electric Co.
2. J. A. DECEW, B.A.Sc., McGill Bldg., Montreal, Que.
Chemical Engineer.
- 3.*H. P. ELLIOTT, B.A.Sc., E.E., London, Ont.
Consulting Electrical Engineer.
3. W. C. GURNEY, Toronto, Ont.
Vice-President, Gurney Foundry Co., Ltd.
- 3.*H. V. HAIGHT, B.A.Sc., Sherbrooke, P.Q.
Chief Engineer, Canadian Ingersoll Rand Drill Co. Ltd.

*Diploma with honours.

1896—Continued.

1. W. F. LAING (deceased).
3. R. R. LAWRIE (deceased).
3. C. MACBETH, B.A.Sc. (deceased).
3. J. A. MACMURCHY, 1315 Elm St., Wilkinsburg, Pa.
Chief Draftsman, Turbine Dept., Westinghouse Machine Co.,
1. T. MARTIN, B.A.Sc. Moose Jaw, Sask.
Assistant Divisional Engineer, C. P. R., Western Division.
3. R. R. SCHEIBE, Toronto, Ont.
Sales Manager, Brigdens, Ltd.

1897.

2. E. ANDREWES, B.Sc., A.M.I.C.E., Portmadoc, N. Wales.
Resident Engineer, Maenofferen Slate Quarry Co., Ltd.
- 2.*J. A. BOW, Chanaral, Chili, S. America.
c/o Andes Copper Mining Co.
1. H. S. CARPENTER, B.A.Sc., O.L.S., Regina, Sask.
Superintendent of Highways, Department of Public Works.
5. H. W. CHARLTON, B.A.Sc., New York, N.Y.
Patent Expert.
- 4.*E. A. FORWARD, A.M. Can. Soc. C.E., Montreal, Que.
With Haney, Quinlan & Robertson.
- 3.*A. T. GRAY, B.A.Sc., Schenectady, N.Y.
Designing Engineer on Steam Turbines, General Electric Co.
3. W. A. B. HICKS, Philadelphia, Pa.
4. C. F. KING, 356 Main St., Winnipeg, Man.
The Great West Perm. Loan Co.
1. H. W. PROUDFOOT (deceased).
- 2.*A. H. A. ROBINSON, B.A.Sc., M.A.I.M.E., Ottawa, Ont.
Mines Branch.
4. W. F. SCOTT, Dunnville, Ont.
Structural Engineer and Consulting Architect.
- 3.*W. R. SMILEY, B.A.Sc., Cleveland, Ohio.
With Wellman-Seaver-Morgan Engineering Co.
- 2.*W. W. STULL, B.A.Sc., O.L.S., Sudbury, Ont.
Surveyor and Mining Engineer.
- 1.*M. B. WEEKES, B.A.Sc., D.L.S., Regina, Sask.
Department of Public Works.
1. E. A. WELDON, 711 McIntyre Block, Winnipeg, Man.
Investment Broker.

1898.

1. W. H. BOYD, B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.
2. W. E. H. CARTER, B.A.Sc., Box 248, Wilkie, Sask.
Consulting Mining Engineer.
3. E. H. DARLING, M.E., A.M. Can. Soc. C.E., Hamilton, Ont.
Resident Engineer East Hamilton Plant, Hamilton Bridge Works Co.
1. W. F. GRANT, B.A.Sc., Sault Ste. Marie, Ont.
City Engineer.
1. J. S. KORMANN, B.A.Sc., Toronto, Ont.
Manager, Kormann Brewing, Ltd.

*Diploma with honours.

1898—Continued.

3. J. E. LAVROCK, Vancouver, B.C.
Draftsman, Hermon & Burwell.
4. D. MACKINTOSH, B.A.Sc., B.Arch., Bennington, Vt.
Chief Superintendent F. M. Andrews & Co., Metropolitan Tower.
- 1.*F. W. MCNAUGHTON, O.L.S., Calgary, Alta.
C.P.R., Dept. of Natural Resources.
1. J. H. SHAW, O.L.S., North Bay, Ont.
Surveyor and Engineer.
3. A. E. SHIPLEY, B.A.Sc., Nelson, B.C.
Manager, Nelson Coke & Gas Co.
- 3.*F. C. SMALLPIECE, B.A.Sc., 1233 2nd St. E., Calgary, Alta.
Chief Engineer, General Supplies Co.
- 1.*R. W. SMITH, P.L.S. (killed in action, France, 1916).
- 1.*J. A. STEWART, M.A., Toronto, Ont.
Chief Engineer, Toronto Structural Steel Co.
- 1.*H. L. VERCOE, 109 McCaul St., Toronto, Ont.
3. T. A. WILKINSON, New York, N.Y.
Statistician, Westinghouse Church Kerr Co.
3. D. A. WILLIAMSON, B.A.Sc., Hamilton, Ont.
With Hamilton Bridge Works Co.

1899.

- 3.*T. BARBER, Meaford, Ont.
Hydraulic Engineer, Chas. Barber & Sons.
2. J. T. M. BURNSIDE, B.A.Sc. (deceased).
3. L. B. CHUBBUCK, B.A.Sc., E.E., Hamilton, Ont.
Engineer, Canadian Westinghouse Co.
2. G. A. CLOTHIER, Stewart, B.C.
Mining Engineer and Surveyor.
1. C. COOPER, Carlyle, Sask.
2. R. W. COULTHARD, B.A.Sc.,
On Overseas Service.
3. J. A. CRAIG, B.A.Sc., Toronto, Ont.
Office of Willis Chipman, C.E.
2. J. C. ELLIOTT, Kelso, Ont.
3. W. E. FOREMAN, B.A.Sc., Pittsburgh, Pa.
Construction Dept., Westinghouse Electric and Mfg. Co.
3. E. GUY, B.A.Sc., Toronto, Ont.
- 3.*W. ALMON HARE, B.A.Sc., A.M. Can. Soc. C.E., Toronto, Ont.
President, The Hare Engineering Co.
1. R. LATHAM, B.A.Sc., Hamilton, Ont.
Chief Engineer, T. H. & B. Ry.
3. W. MONDS, B.A.Sc.,
On Overseas Service.
1. J. PATTERSON, B.A., Toronto, Ont.
Physicist, Dominion Observatory.
3. A. S. H. POPE, B.A.Sc., Portland, Oregon
Pope & Wilcox, Electrical and Mechanical Engineers.

*Diploma with honours.

1899—Continued.

2. G. E. REVELL, B.A.Sc. (killed in action, France, 1915).
- 3.*E. RICHARDS, B.A.Sc., Ottawa, Ont.
Customs Appraiser.
3. G. A. SAUNDERS, Toronto, Ont.
Asst. Engineer, Hydro-Electric Commission.
- 1.*T. SHANKS, B.A.Sc., D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
- 1.*D. C. TENNANT, B.A.Sc., Lachine Locks, Que.
Chief Draftsman with Dominion Bridge Co.
3. W. W. VANEVRY, Sault Ste. Marie, Ont.
City Engineer.
3. W. E. WAGNER, B.A.Sc., Toronto, Ont.
Engineer, Toronto Structural Steel Co.
2. G. H. WATT, D.L.S., Ottawa, Ont.
Dominion Land Surveyor.
3. E. YEATES, London, Ont.
Manager, London Manufacturing and Machine Co.

1900.

1. J. L. ALLAN, M. Can. Soc. C.E., Dartmouth, N.S.
*Office Engineer, Dartmouth Branch Intercolonial Ry.**
2. E. G. R. ARDAGH, B.A.Sc., Toronto, Ont.
Asst. Professor of Applied Chemistry, University of Toronto.
3. J. A. BAIN, Ottawa, Ont.
Structural Engineer, Dept. of Public Works of Canada.
3. J. H. BARLEY, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Electric and Manufacturing Co.
- 2.*M. C. BOSWELL, M.A., Ph.D., Toronto, Ont.
Assoc. Professor of Organic Chemistry, University of Toronto.
1. L. T. BRAY, D. & O.L.S., Amherstburg, Ont.
District Engineer and Surveyor.
3. J. CLARK, Toronto, Ont.
Turnbull Elevator Mfg. Co.
2. J. E. DAVISON, B.A.Sc., Winnipeg, Man.
Engineering Staff, Canadian Northern Ry.
3. E. D. DICKINSON, Schenectady, N.Y.
With General Electric Co.
3. G. W. DICKSON, B.A.Sc., Hawkesbury, Ont.
With Riordan Pulp & Paper Co.
- 2.*H. A. DIXON, B.A.Sc., M.L.S., Jasper, Alta.
District Engineer, Canadian Northern Railway.
2. C. H. FULLERTON, O.L.S., New Liskeard, Ont.
Engineer and Surveyor.
3. W. S. GUEST, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.
3. W. HEMPHILL, B.A.Sc., E.E., Buffalo, N.Y.
Superintendent, Cataract Power & Conduit Co.
2. S. E. M. HENDERSON, Toronto, Ont.
Canadian General Electric Co
3. J. A. HENRY, Schenectady, N.Y.
Designing Engineer, General Electric Co.

*Diploma with honours.

1900—Continued.

2. H. S. HOLCROFT, B.A.Sc., D.L.S. (Died of wounds received in action, France, 1916).
3. H. A. JOHNSON, Toronto, Ont.
Manager, Johnson Oil Engine Co., Ltd.
3. J. C. JOHNSTON, Boston, Mass.
Plant Inspector, Warren Bituminous Paving Co.
- 2.*J. A. JOHNSTON, B.A.Sc., Ignace, Ont.
Contractor.
2. R. E. McARTHUR, Lethbridge, Alta.
2. J. G. McMILLAN, B.A.Sc., M.E.,
On Overseas Service.
3. L. HAUN MILLER, Cleveland, Ohio
Sales Agent, Bethlehem Steel Co.
2. E. V. NEELANDS, B.A.Sc., New Guiana, S. America
Manager, Peters Mines.
- 1.*E. H. PHILLIPS, D.L.S., Saskatoon, Sask.
Phillips & Phillips, Civil Engineers and Surveyors.
2. J. R. ROAF, B.A.Sc.,
On Overseas Service.
- 3.*C. H. E. ROUNTHWAITE, Sault Ste. Marie, Ont.
Chief Draftsman Algoma Central & Hudson Bay Ry.
2. H. W. SAUNDERS, B.A.Sc., Gary, W.Va.
Division Engineer, U. S. Coal & Coke Co.
1. A. TAYLOR, D.L.S. & M.L.S., Portage la Prairie, Man.
Engineer and Surveyor.
1. W. C. TENNANT, B.A.Sc. (deceased).
2. S. M. THORNE, B.A.Sc.,
On Overseas Service.
1. F. W. THOROLD, B.A.Sc., M. Can. Soc. C.E., 2 Toronto St., Toronto,
F. W. Thorold Co., Ltd., Consulting Engineers and Contractors. [Ont.
1. H. M. WEIR, B.A.Sc., Saskatoon, Sask.
City Engineer's Office.
3. F. D. WITHROW, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.

1901.

1. R. H. BARRETT, B.A.Sc., O.L.S. (deceased).
3. W. G. BEATTY, Fergus, Ont.
Manager, Beatty Bros., Implement Manufacturers.
3. G. M. BERTRAM, Toronto, Ont.
Business Manager, Canadian Courier.
3. W. J. BOWERS (deceased).
3. E. T. J. BRANDON, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Com.
3. W. P. BRERETON, B.A.Sc., Winnipeg, Man.
City Engineer.
3. J. T. BROUGHTON, Columbus, Ohio
Gen. Mgr., Factory Sales Co.
- 3.*W. G. CHACE, B.A.Sc., Winnipeg, Man.
Chief Engineer, Greater Winnipeg Water District.
3. A. G. CHRISTIE, M.E., Baltimore, Md.
Assoc. Professor of Mechanical Engineering, Johns Hopkins University

*Diploma with honours.

1901—Continued.

3. J. R. COCKBURN, B.A.Sc., A.M. Can. Soc. C.E.,
On Overseas Service.
1. W. A. DUFF, Moncton, N.B.
Engineer of Bridges, Intercolonial Ry.
- 2.*D. E. EASON, B.A.Sc., Peterboro', Ont.
Division Engineer, Trent Valley Canal.
- 1.*S. GAGNE, B.A.Sc. (deceased).
3. N. R. GIBSON, B.A.Sc., 550 Confederation Life Bldg., Toronto, Ont.
2. A. T. E. HAMER, Wahnapiatae, Ont.
Engineering Staff, Canadian Northern Ry. Co.
1. C. HARVEY, B.A.Sc., D.L.S., C.E., B.C.L.S. Kelowna, B.C.
Consulting Engineer and Surveyor.
2. F. C. JACKSON,
On Overseas Service.
- 3.*R. A. LAIDLAW, C.E. Houston, Texas
Engineer and Sales Agent, Trussed Concrete Steel Co.
3. W. C. LUMBERS, Calgary, Alta.
Engineering Staff, C. P. R.
2. A. C. MACDOUGALL,
On Overseas Service.
3. A. T. C. MCMASTER, B.A.Sc., Toronto, Ont.
Engineer and Contractor.
1. G. MACMILLAN, Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
- 3.*H. G. MCVEAN, B.A.Sc.,
On Overseas Service.
2. W. C. MATHESON, Joliette, Que.
With Mackenzie-Mann & Co.
3. H. T. MIDDLETON, Englewood Cliffs, N.J.
2. J. L. R. PARSONS, B.A., D.L.S.,
On Overseas Service.
1. G. H. POWER, Winnipeg, Man.
Western Canada Rep. of Willis Chipman, C.E.
- 3.*H. W. PRICE, B.A.Sc., Toronto, Ont.
Associate Professor of Electrical Engineering, University of Toronto
1. H. P. RUST, B.A.Sc., A.M. Can. Soc. C.E., San Francisco, Cal.
Great Western Power Co.
3. M. V. SAUER, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Greater Winnipeg Water District.
3. W. H. STEVENSON, B.A.Sc., Monadnock Block, Chicago, Ill.
Secretary Power Plant Specialty Co.
1. R. D. WILLSON (deceased)

1902.

- 3.*H. G. BARBER, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. W. J. BLAIR, B.A.Sc., D. & O.L.S., Calgary, Alta.
3. J. M. BROWN, Pittsburgh, Pa.
With Westinghouse Machine Co., Steam Turbine Dept.

*Diploma with honours.

1902—Continued.

2. W. G. CAMPBELL, Toronto, Ont.
Campbell & Lattimore.
2. A. R. CAMPBELL (deceased).
3. C. G. CARMICHAEL (deceased).
- 2.*W. CHRISTIE, B.A.Sc., Prince Albert, Sask.
Dominion Land Surveyor.
2. F. T. CONLON (deceased).
3. H. V. CONNOR, Hamilton, Ont.
Canadian Westinghouse Co.
- 2.*M. T. CULBERT (deceased).
2. R. CUMMING, Toronto, Ont.
Price, Cumming Brick Co.
1. W. E. DOUGLAS, B.A., 152 Bay St., Toronto, Ont.
Contractor.
- 3.*R. J. DUNLOP, Toronto, Ont.
With Canadian Westinghouse Co.
2. W. M. EDWARDS, B.A.Sc., Lethbridge, Alta.
Duff & Edwards.
3. W. ELWELL (deceased).
2. J. M. EMPEY, B.A.Sc., O.L.S., D.L.S. Calgary, Alta.
Engineer and Surveyor.
- 2.*D. L. H. FORBES, M.E. Chuquicamata, Chili, South America.
Chief Const. Engineer, Chili Exploration Co.
- 1.*A. E. GIBSON, B.A.Sc., Toronto, Ont.
Roger Miller & Sons, Engineers and Contractors.
3. A. C. GOODWIN, Toronto, Ont.
With Hydro-Electric Power Commission.
3. C. P. HENWOOD, McKeesport, Pa.
Draftsman, National Tube Co.
3. D. M. JOHNSTON, Toronto, Ont.
With Hydro-Electric Power Comm.
2. R. H. KNIGHT, B.A.Sc., D.L.S., Edmonton, Alta.
Driscoll & Knight, Engineers and Surveyors.
- 5.*F. L. LANGMUIR, B.A.Sc., Ph.D., Toronto, Ont.
Chemist, M. Langmuir Mfg. Co.
3. A. H. MCBRIDE, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Commission.
1. A. L. MCLENNAN, D.L.S.,
On Overseas Service.
3. J. T. MACKAY, Toronto, Ont.
3. J. F. S. MADDEN, Toronto, Ont.
Canadian General Electric Co.
- 3.*C. H. MARRS, C.E., Hamilton, Ont.
Hamilton Bridge Works.
3. P. MATHISON, B.A.Sc., East Pittsburgh, Pa.
Westinghouse Electric & Manufacturing Co.
3. R. S. MENNIE, Pittsburgh, Pa.
With Crucible Steel Co. of America.
2. H. H. MOORE, D.L.S., A.M. Can. Soc. C.E., Calgary, Alta.
Dominion Land Surveyor and Engineer.
- 1.*T. S. NASH, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. G. G. POWELL, B.A.Sc., Toronto, Ont.
Assist. City Engineer.

*Diploma with honours.

1902—Continued.

- 1.*W. F. RATZ, D.L.S. (deceased).
3. H. D. ROBERTSON, B.A.Sc.,
On Overseas Service.
- 3.*D. SINCLAIR, B.A.Sc. (deceased).
- 2.*I. J. STEELE, D.L.S.,
Topographical Surveys Branch, Dept. of Interior. Ottawa, Ont.
3. W. H. SUTHERLAND, B.A.Sc.,
Assistant Chief Engineer, Montreal Water and Power Co. Montreal, Que.
- 3.*THOS. TAYLOR, C.E.
494 Concord Ave., Toronto, Ont.
Des. and Const. Engineer, Bloor Street Viaduct.
- 2.*C. M. TEASDALE,
Surveyor. Concord, Ont.
3. A. A. WANLESS,
Asst. Engineer and Shop Supt. N. S. S. & C. Co. Sydney Mines, N.S.
3. H. J. ZAHN, B.A.Sc.,
235 Calumet St., Detroit, Mich.

1903.

3. H. G. ACRES,
Asst. Engineer, Hydro-Electric Power Commission. Toronto, Ont.
1. J. G. R. ALISON,
With Riter-Conley Mfg. Co. Pittsburgh, Pa.
- 3.*H. H. ANGUS, B.A.Sc.,
MacMullen, Riley & Durley, Consulting Engineers. Toronto, Ont.
3. J. A. BEATTY,
Morrow & Beatty, Contractors. Peterboro', Ont.
- 3.*J. BRESLOVE,
Allis-Chalmers Co. Pittsburgh, Pa.
2. J. H. BURD, O., D., S. & A. L. S., C.E.,
Engineer and Surveyor. Saskatoon, Sask.
- 1.*E. L. BURGESS, D.L.S.,
Burgess & Taggart, Surveyors and Engineers. Kamloops, B.C.
2. N. A. BURWASH, B.A.Sc.,
On Overseas Service.
1. F. F. CLARKE, D. & O.L.S., A.M. Can. Soc. C.E.,
On Overseas Service.
2. C. L. COULSON,
On Overseas Service.
- 3.*A. E. DAVISON, B.A.Sc., C.E.
Engineering Staff, Hydro-Electric Power Commission. Toronto, Ont.
3. C. J. FENSOM, B.A.Sc., M.E.,
Works Engineer, Otis-Fensom Elevator Co. Hamilton, Ont.
- 2.*E. O. FUCE, O.L.S.,
84 King Street E., Toronto, Ont.
Engineer and Surveyor.
- 3.*F. A. GABY, B.A.Sc.,
Chief Engineer, Hydro-Electric Power Commission. Toronto, Ont.
1. J. C. GARDNER, B.A.Sc.,
Consulting Engineer. Niagara Falls, Ont.
3. R. E. GEORGE,
Electrical and Gas Engineer, The United Gas & Electric Co. Dover, N.H.
- 1.*P. GILLESPIE, B.A.Sc., C.E.
Associate Professor of Applied Mechanics, University of Toronto. Toronto, Ont.
1. W. A. GOURLAY,
Chief Engineer, Dominion Govt. Victoria, B.C.

*Diploma with honours.

1903—Continued.

2. J. F. HAMILTON, B.A.Sc., C.E., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.
2. G. S. HANES, B.A.Sc., O.L.S., North Vancouver, B.C.
Mayor.
2. F. Y. HARCOURT, B.A., Port Arthur, Ont.
Engineer, Public Works Dept.
1. L. J. HAYES, 2434 Niagara Ave., Niagara Falls, N.Y.
- 1.*F. D. HENDERSON, Secy. Board of Examiners for D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
- 5.*J. A. HORTON, Winnipeg, Man.
Chemist, Lever Brothers.
3. J. G. JACKSON, 98 Frontenac St., Kingston, Ont.
3. G. K. JOHNSTON, Pefferlaw, Ont.
Merchant.
1. H. JOHNSTON, O.L.S., Kitchener, Ont.
City Engineer.
3. A. G. LANG, 190 University Ave., Toronto, Ont.
Hydro-Electric Power Commission.
- 1.*A. J. LATORNELL, B.A.Sc. (died of wounds received in action, 1917).
- 1.*H. J. MCAUSLAN, B.A.Sc., O.L.S., North Bay, Ont.
Staff of T. & N. O. Ry.
3. J. A. MCFARLANE, B.A.Sc., Hamilton, Ont.
Chief Draftsman, Hamilton Bridge Works Co.
- 1.*A. L. MCNAUGHTON, Prince Rupert, B.C.
With G. T. P. Co.
- 5.*F. G. MARRIOTT, B.A.Sc., Toronto, Ont.
Chemist and Supt. Asphalt Plant, City Testing Laboratory.
- 3.*C. A. MAUS, Paris, Ont.
- 3.*M. L. MILLER, Pittsburgh, Pa.
Draftsman, McClintic-Marshall Construction Co.
3. P. H. MITCHELL, E.E., Toronto, Ont.
Consulting Electrical Engineer, Traders Bank Building.
- 2.*R. H. MONTGOMERY, B.A.Sc., O. and D.L.S., Prince Albert, Sask.
Engineer and Surveyor.
1. F. A. MOORE, Toronto, Ont.
Engineering Dept. C. N. Ry.
3. E. E. MULLINS, Port Limon, Costa Rica.
Supt. Motive Power, Northern Ry. Co.
3. I. H. NEVITT, B.A.Sc., Toronto, Ont.
Asst. Engineer, Main Drainage Dept., City Hall.
1. E. W. OLIVER, B.A.Sc., C.E., Toronto, Ont.
Assistant to Chief Engineer, Canadian Northern Ry. System.
3. J. P. OLIVER, On Overseas Service.
3. J. D. PACE, B.A.Sc.,
3. B. B. PATTEN, B.A.Sc., On Overseas Service.
2. D. H. PHILP, Ottawa, Ont.
Georgian Bay Canal Survey.
- 3.*D. H. PINKNEY, Elyria, O.
National Tube Dept., U. S. Steel Corporation.

*Diploma with honours.

1903—Continued.

2. T. H. PLUNKETT, B.A.Sc., Meaford, Ont.
Dominion Land Surveyor.
1. D. F. ROBERTSON, D.L.S.,
On Overseas Service.
- 3.*H. M. SCHEIBE, B.A.Sc., 10 Adelaide Rd., Somerville, Mass
Supt., E. F. Delisle Co.
- 1.*H. L. SEYMOUR, B.A.Sc., D.L.S., Box 151, Ottawa, Ont.
Sanitary Engineer.
1. J. H. SMITH, D. & O.L.S., 140 Jasper Ave. West, Edmonton, Alta.
Engineer and Surveyor.
3. H. G. SMITH, B.A.Sc. (deceased).
3. S. L. TREES, B.A.Sc., Whitby, Ont.
Manager, Samuel Trees & Co.
2. J. E. UMBACH, Victoria, B.C.
Surveyor General, British Columbia.
1. J. WALDRON, D.L.S., Moose Jaw, Sask.
Engineer and Surveyor.
- 3.*S. B. WASS, Fredericton, N.B.
Supt. St. John & Quebec R.R.
3. J. A. WHELIHAN, Box 165, Regina, Sask.
3. H. F. WHITE,
On Overseas Service.
- 2.*C. G. WILLIAMS, B.A.Sc., Porcupine, Ont.
Hollinger Mine.
- 1.*N. D. WILSON, B.A.Sc., Toronto, Ont.
Toronto Harbour Commission.
- 1.*C. R. YOUNG, B.A.Sc., C.E., Mem. Can. Soc. C.E., Toronto, Ont.
Asst. Professor in Structural Engineering, University of Toronto.

1904.

- 3.*J. H. ALEXANDER, B.A., C.E., A. M. Am. Soc. C.E., Winnipeg, Man.
Engineer and Contractor.
- 3.*J. H. BARRETT, Toronto, Ont.
With the Wm. Davies Co., Ltd.
3. M. B. BONNELL,
On Overseas Service.
3. T. D. BROWN, B.A.Sc., Calgary, Alta.
Canadian Fairbanks Co.
1. R. J. BURLEY, Ottawa, Ont.
Dept. of the Interior.
3. F. W. BURNHAM, B.A.Sc.,
On Overseas Service.
3. J. W. CALDER, B.A.Sc., Fort William, Ont.
With Hydro-Electric Commission.
1. N. C. CAMERON, 4172 Dorchester St., Montreal, Que.
Dominion Engineering and Construction Co.
1. A. J. CAMPBELL, B.A.Sc., Collingwood, Ont.
- 3.*A. M. CAMPBELL, B.A.Sc., M.E., Weston, Ont.
Erection Engineer, Toronto Structural Steel Co.
4. J. B. CHALLIES, C.E., Ottawa, Ont.
Supt., Water Power Branch, Department of the Interior.
2. C. A. CHILVER, Walkerville, Ont.

*Diploma with honours.

1904—Continued.

2. H. L. CHILVER,
On Overseas Service.
1. U. W. CHRISTIE, B.A.Sc., O.L.S.,
Wheelock & Christie, Civil Engineers. Orangeville, Ont.
2. P. C. COATES, B.A.Sc.,
D. and B. C. Land Surveyor. Victoria, B.C.
1. S. B. CODE, O.L.S.,
Civil Engineer and Land Surveyor. Smith's Falls, Ont.
- 1.*T. F. CODE, B.A.Sc. (deceased).
- 1.*W. A. COWAN,
Division Engineer, Transcontinental Railway. Cochrane, Ont.
- 3.*S. E. CRAIG, B.A.Sc., Snelgrove, Ont.
- 1.*S. R. CRERAR, B.A.Sc., O.L.S.,
Lecturer in Surveying, University of Toronto. Toronto, Ont.
3. W. M. CURRIE,
General Manager, Burlington Steel Co., Ltd. Hamilton, Ont.
3. H. H. DEPEW,
Supt. Crow's Nest Pass Electric Light and Power Co. Fernie, B.C.
2. A. J. ELDER,
Topographical Surveys Branch, Department of the Interior. Ottawa, Ont.
2. J. G. FLECK,
On Overseas Service.
- 1.*A. L. FORD, B.A.Sc.,
Government Inspector, Dept. of Railways and Canals. Prince Rupert, B.C.
3. W. S. GIBSON, B.A.Sc.,
38 Park Rd., Toronto, Ont.
1. J. N. GOODALL,
Gray-Dort Motors, Ltd. Chatham, Ont.
1. J. P. GORDON,
Engineering Staff, Willis Chipman, C.E. Box 266, Dauphin, Man.
3. W. W. GRAY, B.A.Sc.,
Inspector, Fairbanks Morse Co. Toronto, Ont.
3. A. GRAY, B.A.Sc.,
On Overseas Service.
3. W. K. GREENWOOD, B.A.Sc.,
Town Engineer. Orillia, Ont.
1. L. D. HARA,
Assistant Engineer, Welland Canal Co. St. Catharines, Ont.
3. C. J. HARRIS, B.A.Sc.,
With Brantford Screw Co. Brantford, Ont.
1. J. B. HERON, B.A.Sc.,
On Overseas Service.
1. E. M. M. HILL,
Engineering Dept. Canadian Northern Railway. Edmonton, Alta.
2. S. N. HILL, C.E.,
"The Alexandra", Ottawa, Ont.
2. C. J. INGLES,
Topographical Surveys Branch, Department of the Interior.
1. E. A. JAMES, B.A.Sc., C.E.,
Engineer, York County Highway Commission. Toronto, Ont.
1. P. V. JERMYN, B.A.Sc.,
C. P. R. Construction Department. 118 King St. West, Toronto, Ont.
3. W. S. H. KEEFE,
Manager, Light, Heat and Power Co. Fort Covington, N.Y.
3. W. J. LARKWORTHY (deceased).

*Diploma with honours.

1904—Continued.

3. O. B. McCUAIG, B.A.Sc.,
On Overseas Service.
1. G. G. McEWEN, B.A.Sc., Winchester, Ont.
Office of T. H. Dunn, O.L.S.
- 1.*W. G. McFARLANE, B.A., B.A.Sc., 55 Elliott St., Toronto, Ont.
Engineer and Surveyor, Peace River Dist.
- 3.*C. P. McGIBBON, B.A., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. McKAY, B.A.Sc. (deceased).
1. D. McMILLAN, Edmonton, Alta.
With C.N.R.
3. G. J. MANSON, M.E., Penetang, Ont.
Engineer, Grenville Board Co.
- 1.*W. N. MOORHOUSE, *On Overseas Service.*
3. E. E. MOORE, Toronto, Ont.
Hydro-Electric Power Commission.
3. W. H. MUNRO, *On Overseas Service.*
3. G. PACE, B.A.Sc., Midland, Ont.
With Simcoe Ry. and Power Co.
3. W. S. PARDOE, B.A.Sc., Philadelphia, Pa.
Asst. Prof. in Civil Engineering, University of Pennsylvania.
3. J. PARIS, North Bay, Ont.
c/o S. B. Clement, T.N.O. Ry.
1. J. PARKE, B.A.Sc., Havilah, Ont.
Chemist and Assayer.
3. W. J. PEAKER, Ottawa, Ont.
Topographical Surveys Branch, Dept. of the Interior.
- 3.*A. E. PICKERING, Sault Ste. Marie, Ont.
Manager, Tagona Light and Power Co.
1. D. L. C. RAYMOND, B.A.Sc., Montreal, Que.
The Raymond Construction Co., Ltd.
1. F. B. REID, B.A.Sc., Ottawa, Ont.
Astronomical Surveys Branch, Dept. of the Interior.
- 3.*M. R. RIDDELL, B.A.Sc., Toronto, Ont.
Canadian Aeroplanes and Motors, Ltd.
1. L. H. ROBINSON, Moncton, N.B.
Asst. Engineer, Canadian Government Railways.
3. G. S. ROXBURGH, B.A.Sc., Winnipeg, Man.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
2. F. N. RUTHERFORD, B.A.Sc., *On Overseas Service.*
3. P. M. SAUDER, 513 8th Ave. W., Calgary, Alta.
- 1.*J. D. SHEPLY, B.A.Sc., D.L.S. N. Battleford, Sask.
District Surveyor and Engineer.
3. F. W. SLATER, B.A.Sc., Schenectady, N.Y.
With General Electric Co.
- 3.*R. S. SMART, M.E., Ottawa, Ont.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. D. A. SMITH, B.A.Sc., D. & S. L. S., *On Overseas Service.*
3. W. J. SMITHER, B.A.Sc., Toronto, Ont.
Lecturer in Structural Engineering, University of Toronto.

*Diploma with honours.

1904—Continued.

3. S. E. THOMSON, B.A.Sc., Niagara Falls, Ont.
Engineering Staff, Electrical Development Co.
3. C. J. TOWNSEND, B.A.Sc., C.E. 79 Spadina Ave., Toronto, Ont.
Wilson, Townsend & Saunders.
1. D. T. TOWNSEND, B.A.Sc., O.L.S., Calgary, Alta.
Chief Surveyor, Dept. of Natural Resources, C.P.R.
1. A. V. TRIMBLE, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
3. B. B. TUCKER, B.A.Sc., Morrisburg, Ont.
Resident Engineer, New York and Ontario Power Co.
- 2.*E. WADE, B.A., Welland, Ont.
Builder.
- 1.*E. W. WALKER, B.A.Sc. (deceased).
3. J. P. WATSON, B.A.Sc., Montreal, Que.
With Dominion Bridge Co. Ltd.
1. J. M. WEIR, Toronto, Ont.
Sec.-Treasurer, The Toronto Plate Glass Importing Co., Ltd.
- 1.*A. F. WELLS, O.L.S., B.A.Sc., Toronto, Ont.
Wells & Gray, Ltd., Engineers and Contractors.
1. W. R. WORTHINGTON, B.A.Sc., Toronto, Ont.
Assistant Sewer Engineer, Staff of City Engineer.
3. W. F. WRIGHT, Toronto, Ont.
Ontario Manager, Eugene F. Phillips Electrical Works.

1905.

2. H. W. ARENS (deceased).
3. R. H. ARMOUR, 345 Jarvis Street, Toronto, Ont.
- 3.*C. B. AYLESWORTH, Hamilton, Ont.
Draftsman, Canadian Westinghouse Co.
- 1.*W. BARBER, B.A.Sc., Toronto, Ont.
Engineer, Waterworks Department, City Hall.
- 2.*W. A. BEGG, B.A.Sc., Regina, Sask.
Department of Public Works.
- 3.*G. G. BELL, Pittsburg, Pa.
West Penn. Power Co.
1. J. C. BOECKH, Toronto, Ont.
With Boeckh Brush Co.
3. W. M. BRISTOL, Halifax, N.S.
Canadian Westinghouse Co.
2. W. C. CAMPBELL,
On Overseas Service.
3. W. R. CARSON, Cleveland, O.
Engineering Dept., Grasselli Chemical Co.
1. A. V. CHASE, Ottawa, Ont.
Dept. of the Interior.
3. S. R. A. CLEMENT, Toronto, Ont.
With Hydro-Electric Power Commission.
3. T. E. CORRIGAN, New Westminster, B.C.
Electrical Contractor.
- 1.*N. L. R. CROSBY, B.A.Sc., Toronto, Ont.
Contracting Engineer, Toronto Structural Steel Co.
1. G. H. FERGUSON, B.A.Sc.,
On Overseas Service.
3. H. S. FIERHELLER, B.A.Sc. (deceased)

*Diploma with honours.

1905—Continued.

3. F. H. HARRISON, 320 Fifth Ave., New York, N.Y.
Engineer, H. D. Best Co.
1. M. C. HENDRY, B.A.Sc., Winnipeg, Man.
Manitoba Hydrographic Survey.
2. C. S. L. HERTZBERG.
On Overseas Service.
- 3.*W. G. HEWSON, B.A.Sc., Toronto, Ont.
Hydro Electric Power Commission.
1. G. S. JONES, Ottawa, Ont.
Topographical Surveys Br., Dept. of Interior.
- 3.*G. KRIBS, 190 University Ave., Toronto, Ont.
With H.E.P.C.
2. P. A. LAING,
On Overseas Service.
1. A. LATORNELL, B.A.Sc., Toronto, Ont.
Sewer Department, City Hall.
3. J. W. LEIGHTON, Toronto, Ont.
President, Leighton-Jackes Mfg. Co.
- 1.*T. R. LOUDON, B.A.Sc.,
On Overseas Service.
3. S. E. MCGORMAN, Walkerville, Ont.
Asst. Engineer, Canadian Bridge Co.
- 1.*W. W. MCGREGOR (deceased).
2. D. W. MCKENZIE, Winnipeg, Man.
Draftsman, Engineering Dept. C.N. Ry.
- 3.*C. A. MCLEAN, Toronto, Ont.
Masco Co.
2. W. N. MCLEAN, Erin, Ont.
3. F. G. MACE, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.
3. R. W. MOFFATT, B.A.Sc., Winnipeg, Man.
University of Manitoba.
3. L. W. MORDEN, St. Catharines, Ont.
Packard Electric Co.
3. G. R. MUNRO, B.A.Sc., Peterborough, Ont.
c/o Wm. Hamilton Manufacturing Co.
- 3.*W. G. NICKLIN, B.A.Sc., Grand Rapids, Mich.
Assistant Superintendent, Dalnu & Kiefer Tanning Co.
1. E. D. O'BRIEN, St. Catharines, Ont.
Welland Ship Canal.
- 1.*B. B. PATTEN, B.A.Sc., St. Catharines, Ont.
Rutherford & Patten, Surveyors and Engineers.
1. E. P. A. PHILLIPS, B.A.Sc., O.L.S., Port Arthur, Ont.
Phillips & Benner.
1. W. B. PORTE, Oakville, Ont.
2. E. F. PULLEN,
On Overseas Service.
2. G. L. RAMSEY, B.A.Sc., Sault Ste. Marie, Ont.
Ontario Land Surveyor.
1. G. W. RAYNER, Toronto, Ont.
Ontario Rock Co.
- 3.*R. B. ROSS (deceased).
5. T. E. ROTHWELL, B.A.Sc., Toronto, Ont.
Provincial Assay Office.

*Diploma with honours.

1905—Continued.

- 2.*G. S. SCOTT, 26 Howard St., Toronto, Ont.
 3. H. V. SERSON,
On Overseas Service.
 3. C. H. SHIRRIFF, B.A.Sc., Toronto, Ont.
Chemist, Imperial Extract Co.
 3.*C. E. SISSON, Peterboro', Ont.
Canadian Gen. Electric Co.
 1. D. L. N. STEWART, B.A.Sc.,
On Overseas Service.
 1. M. A. STEWART, Toronto, Ont.
Assistant Engineer, Roadway Dept., City Hall.
 3.*W. F. STUBBS, Galt, Ont.
Assistant Engineer, Goldie & McCulloch Co.
 1. N. H. STURDY, Youngstown, O.
Chief Engineer, Truscon Steel Co.
 1. W. G. SWAN, B.A.Sc., C.E.,
On Overseas Service.
 1.*F. H. SYKES, O.L.S., D.L.S., Toronto, Ont.
City Architect's Dept., City Hall.
 3. L. R. THOMSON, B.A.Sc., Ottawa, Ont.
With Dominion Bridge Co.
 3. E. D. TILLSON, B.A.Sc., 502 Webster Building, Chicago, Ill.
 1.*J. J. TRAILL, B.A.Sc., Toronto, Ont.
Lecturer in Mechanical Engineering, University of Toronto.
 1.*W. M. TREADGOLD, B.A., Toronto, Ont.
Asst. Professor in Surveying, University of Toronto.
 3. W. E. TURNER, B.A.Sc., Salt Lake City, Utah
With Utah Light & Ry. Co.
 3. A. E. UREN, Toronto, Ont.
Editor, Acton Publishing Co.
 3. J. M. VAUGHAN, 58 Melville Ave., Toronto, Ont.
Contractor.
 1. H. L. WAGNER, B.A.Sc., Toronto, Ont.
Chief Draftsman, Toronto Structural Steel Co., Ltd.
 2. W. H. YOUNG, B.A.Sc., D.L.S., Calgary, Alta.
District Engineer.

1906.

1. F. ALPORT, B.A.Sc., D.L.S.
On Overseas Service.
 3.*W. L. AMOS, Toronto, Ont.
Hydro-Electric Power Commission.
 1. A. H. ARENS, Inverness, N.S.
Resident Engineer, Inverness Ry. & Coal Co.
 3.*J. C. ARMER, B.A.Sc.,
On Overseas Service.
 1. M. H. BAKER, B.A.Sc., Toronto, Ont.
With Canadian Fire Underwriters Ass'n.
 3. F. W. BALDWIN,
On Overseas Service.
 2. E. W. BANTING, B.A.Sc., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
 3. F. BARBER, 57 Adelaide St. East, Toronto, Ont.
York County Engineer.

*Diploma with honours.

1906—Continued.

2. M. BATES, B.A.Sc. (deceased).
2. J. P. BELLISLE (deceased).
- 3.*H. H. BETTS, B.A.Sc.,
On Overseas Service.
- 5.*D. E. BEYNON, B.A.Sc., Toronto, Ont.
General Supt., Dunlop Tire and Rubber Goods Co.
2. G. W. BISSETT, Naughton, Ont.
Mill Supt., Canadian Exploration Co., Ltd.
3. W. C. BLACKWOOD, B.A.Sc., Toronto, Ont.
Instructor, Technical High School.
3. H. E. BRANDON, B.A.Sc.,
On Overseas Service.
1. M. E. BRIAN, B.A.Sc., O.L.S., A.M. Can. Soc. C.E., Windsor, Ont.
City Engineer.
2. F. C. BROADFOOT, Vancouver, B.C.
Broadfoot, Johnston & Hamilton.
2. T. W. BROWN, B.A.Sc., D., S. & A.L.S., A.M. Can. Soc., C.E.,
Brown & Loucks, Civil Engineers. Saskatoon, Sask.
- 1.*A. E. K. BUNNELL, B.A.Sc., Toronto, Ont.
Engineer, Civic Transportation Committee.
3. F. M. BYAM, Toronto, Ont.
Chief Engineer, McGregor and McIntyre.
3. A. CAMERON, Winnipeg, Man.
Provincial Architect's Office.
3. A. W. CAMPBELL, B.A.Sc., Toronto, Ont.
1. M. J. CARROLL, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
- 3.*R. E. C. CHADWICK, Montreal, Que.
Eastern Manager, The Foundation Co., Ltd., of New York.
- 1.*G. T. CLARK, B.A., Toronto, Ont.
Designing Engineer, Toronto Harbour Commission.
- 3.*G. A. COLHOUN, Hamilton, Ont.
Draftsman, The Hamilton Bridge Works Co., Ltd.
- 1.*W. A. M. COOK, B.A.Sc., Toronto, Ont.
Staff of City Architect, City Hall.
- 1.*E. L. COUSINS, B.A.Sc., Toronto, Ont.
General Manager, Harbour Commission.
4. A. G. CREIGHTON, Prince Albert, Sask.
Creighton & Strothers, Architects and Structural Engineers.
4. W. N. DANIELS, Noble Road, Jenkintown, Pa.
- 3.*N. P. F. DEATH, B.A.Sc., Toronto, Ont.
Death & Watson, Electrical Engineers and Contractors.
3. C. S. DUNDASS, B.A.Sc., Lachine, Que.
With Dominion Bridge Co.
3. S. L. FEAR, Toronto, Ont.
With Canada Foundry Co.
- 5.*C. C. FORWARD, 50 Bedford Row, Halifax, N.S.
5. C. W. GRAHAM, B.A.Sc., Toronto, Ont.
Chemist, Dunlop Tire and Rubber Goods Co.,
3. J. GRAY,
On Overseas Service.
- 1.*P. W. GREENE,
On Overseas Service.

*Diploma with honours.

1906—Continued.

3. C. B. HAMILTON, B.A.Sc., Toronto, Ont.
Manager, Hamilton Gear and Machinery Co.
- 1.*A. L. HARKNESS, B.A.Sc., Montreal, Que.
St. Lawrence Bridge Co., Ltd.
- 1.*R. L. HARRISON, Toronto, Ont.
 1. E. HARRISON, B.A.Sc., 513 Beveridge Blk., Calgary, Alta.
Consulting Civil Engineer and Surveyor.
3. J. C. HARTNEY, B.A.Sc. (Killed in action, France, 1918).
1. S. HETT, B.A.Sc., LePas, Man.
Locating Engineer of the Hudson Bay Ry.
3. C. R. HILLIS. (Killed in action, France, 1918).
3. C. W. HOOKWAY, B.A.Sc., Hamilton, Ont.
Westinghouse Mfg. Co.
3. R. H. HOPKINS, B.A.Sc.,
On Overseas Service.
- 1.*R. S. HOUSTON, Winnipeg, Man.
With the Dominion Bridge Co.
- 2.*W. HUBER, Toronto, Ont.
With Provincial Highway Commission.
- 3.*A. H. HULL, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
3. W. C. JEPSON, Niagara Falls, Ont.
Welland Canal Office.
- 1.*C. JOHNSTON, B.A.Sc., Oakville, Ont.
Engineer, Toronto and York Radial Ry.
1. G. R. JONES, B.A.Sc.,
On Overseas Service.
3. T. JONES, B.A.Sc. (Killed in action, France, 1916).
- 1.*A. E. JUPP, B.A.Sc., Toronto, Ont.
3. J. D. KEPPY, 50 Pearl St., Toronto, Ont.
Mechanical Engineer.
1. J. L. LANG, B.A.Sc., D. & O.L.S.,
On Overseas Service.
3. A. P. LINTON, B.A.Sc.,
On Overseas Service.
- 4.*A. WELLESLEY McCONNELL, B.A.Sc.,
On Overseas Service.
- 3.*D. G. McILWRAITH, Galt, Ont.
Draftsman, The Goldie & McCulloch Co., Ltd.
2. J. A. McKENZIE, Kerrisdale, B.C.
c/o J. A. McKenzie & Co.
- 1.*J. V. McNAB, Moose Jaw, Sask.
Resident Engineer, C.P.R.
3. J. A. McPHERSON, Toronto, Ont.
2. K. A. MacKENZIE, B.A.Sc., Toronto, Ont.
Teacher, Malvern High School.
1. W. C. MacKINNON, Lachine, P.Q.
Dominion Bridge Co.
- 3.*W. MacLACHLAN, B.A.Sc., Toronto, Ont.
Electrical Employers Ass'n., and Hydro Electric Power Commission.
- 3.*D. W. MARRS, 534 Centennial Ave., Sewickley, Pa.

*Diploma with honours.

1906—Continued.

3. W. A. MAXWELL, Winnipeg, Man.
Dominion Bridge Co.
- 1.*REV. J. MELLON MENZIES, B.A.Sc., D.L.S., Wu An Hsien, North
Missionary. Honan, China
3. L. R. MILLER, B.A.Sc., Watrous, Sask.
Supt., Electric Light, Power and Traction Co.
- 1.*B. F. MITCHELL, B.A.Sc., Edmonton, Alta.
Municipal Engineer.
1. F. F. MONTAGUE.
On Overseas Service.
- 1.*W. J. MOORE, O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.
1. C. R. MURDOCK, B.A.Sc., Burlington, Ont.
Resident Engineer, Chipman and Power.
2. C. J. MURPHY, B.A.Sc., Nova Scotia Bank Bldg., St. Catharines,
Consulting Engineer. Ont.
- 1.*W. P. NEAR, B.A., B.A.Sc., St. Catharines, Ont.
City Engineer.
2. R. NEELANDS, Port Hammond, B.C.
3. D. G. PARK, B.A.Sc., 92 Arlington St., Winnipeg, Man.
Engineer, Waldron Co., Ltd., Heating Engineers.
3. G. W. PATERSON, 800 Poyntz Ave., Manhattan, Kansas.
5. R. E. PETTINGILL, Port Colborne, Ont.
Chief Chemist, Canada Cement Co.
- 2.*R. C. PURSER, B.A.Sc., 213 Fifth Ave., Ottawa, Ont.
Office of Surveyor General.
3. N. R. ROBERTSON, B.A.Sc.,
On Overseas Service.
1. J. O. RODDICK, B.A.Sc., Brantford, Ont.
Contractor.
1. C. H. ROGERS, B.A.Sc.,
On Overseas Service.
- 2.*O. ROLFSON, M.A.Sc., D.L.S., O.L.S.,
On Overseas Service.
1. R. C. ROSS, B.A.Sc., Ottawa, Ont.
Department of the Interior.
1. K. G. ROSS, Sault Ste. Marie, Ont.
Lang & Ross, Engineers and Surveyors.
- 1.*H. T. ROUTLY, O.L.S., D.L.S., 127 Havelock St., Toronto, Ont.
2. J. H. RYCKMAN, Sault Ste. Marie, Ont.
With Algoma Construction & Eng. Co.
- 3.*W. K. SANDERS, 58 Webster St., West Newton, Mass.
- 1.*W. A. SCOTT, B.A.Sc., D.L.S., Galt, Ont.
Dominion Land Surveyor.
- 1.*W. M. STEWART, B.A.Sc., Saskatoon, Sask.
Phillips, Stewart & Lee.
2. J. E. THOMSON, B.A.Sc., W. Virginia, U.S.A.
With Sterling Coal Co.
- 3.*C. L. VICKERY (deceased).
5. W. E. WICKETT (deceased).
- 3.*J. N. WILSON, B.A.Sc., Toronto, Ont.
Asst. Eng. H.E.P.C.
- 3.*E. M. WOOD, B.A.Sc., 136 Lee Ave., Toronto, Ont.
Engineering Dept., Canadian General Electric Co., Ltd.

*Diploma with honours.

1907.

- 3.*F. G. ALLEN, B.A.Sc.,
On Overseas Service.
1. F. J. ANDERSON, B.A.Sc.,
On Overseas Service.
1. A. P. AUGUSTINE,
On Overseas Service.
- 3.*H. D. BOWMAN, B.A.Sc.,
3. W. S. BRADY, B.A.Sc.,
1. G. H. BROUGHTON,
1. J. A. BROWN, B.A.Sc.,
Trussed Concrete Steel Co.
1. W. J. BRUCE,
Dept. of Public Works.
1. C. E. BUSH, B.A.Sc.,
On Overseas Service.
3. J. H. CASTER,
Hydro-Electric Power Commission.
- 1.*E. CAVELL,
1.*C. B. B. CONNELL,
3.*G. C. COWPER, B.A.Sc.,
Topographical Surveys in Sask.
2. J. V. CULBERT, B.A.Sc.,
Buffalo Mines.
- 3.*R. S. DAVIS, B.A.Sc.,
Davis, Hartney & Co.
3. S. D. EVANS, B.A.Sc.,
3.*F. R. EWART, B.A.Sc.,
Ewart & Jacob, Excelsior Life Building.
1. G. R. S. FLEMING. (Killed in action, 1917).
6. P. C. FUX, B.A.Sc.,
With Waterous Engine Works Co.
1. J. S. GALLETLY, B.A.Sc.,
2. G. GALT, B.A.Sc., (killed in action, France, 1916).
1. A. B. GARROW, B.A.Sc.,
On Overseas Service.
1. A. GILLIES, B.A.Sc.,
On Overseas Service.
1. G. W. GRAHAM,
3. C. S. GRASETT, B.A.Sc.,
1.*R. E. W. HAGARTY, B.A.Sc.,
Industrial Engineer.
3. K. HALL, B.A.Sc.,
On Overseas Service.
1. C. T. HAMILTON, B.A.Sc.,
Johnston and Hamilton.
3. R. A. HARE,
With Canadian Crocker Wheeler Co.
1. H. F. H. HERTZBERG,
On Overseas Service.
- 3.*H. O. HILL, B.A.Sc.,
On Overseas Service.
- 1.*T. H. HOGG, B.A.Sc., C.E.,
Asst. Engineer, Hydro-Electric Power Com.
- Y.M.C.A., Brooklyn, N.Y.
413 Palmerston Ave., Toronto, Ont.
176 Montrose Ave., Toronto, Ont.
Vancouver, B.C.
- Sault Ste. Marie, Ont.
- Toronto, Ont.
- Toronto, Ont.
St. Kitts, B.W.I.
Welland, Ont.
- Cobalt, Ont.
- 315 Rogers Bldg., Vancouver, B.C.
- Leamington, Ont.
Toronto, Ont.
- Brantford, Ont.
- Brooklin, Ont.
- Eugenia, Ont.
Barrie, Ont.
- 662 Euclid Avenue, Toronto, Ont.
- 142 Hastings St. W., Vancouver, B.C.
- St. Catharines, Ont.
- Toronto, Ont.

*Diploma with honours.

1907—Continued.

- 3.*C. H. HUTTON, B.A.Sc., Hamilton, Ont.
Engineering Staff, Dominion Power Co.
1. H. M. HYLAND, B.A.Sc., 39 Portland Street, New York, N.Y.
3. E. W. HYMAN, B.A.Sc., London, Ont.
Assistant Superintendent, London Electric Co.
- 3.*L. G. IRELAND, B.A.Sc.,
Chief Engineer, Hydro-Electric System, Eastern Ontario.
- 1.*W. JACKSON, B.A.Sc., Niagara Falls, Ont.
Field Engineer, Ontario Power Co.
- 4.*C. B. JACKSON, Toronto, Ont.
Jackson-Lewis Co.
- 3.*E. W. KAY, B.A.Sc., 517 Bannatyne Ave., Winnipeg, Man.
3. D. F. KEITH, B.A.Sc.,
On Overseas Service.
1. H. P. KEITH, Edmonton, Alta.
Smith & Keith, Alta. Land Surveyors and Engineers.
1. A. A. KINGHORN, B.A.Sc., Toronto, Ont.
Manager, Asphaltic Concrete Co. of Toronto, Ltd.
1. L. W. KLINGER,
On Overseas Service.
- 1.*F. C. LAMB, B.A.Sc., Saskatoon, Sask.
Phillips, Stewart & Lee.
3. A. D. LEPAN, B.A.Sc., Toronto, Ont.
Lieut.-Col., Commandant, School of Instruction, M.D. No. 2.
1. J. H. LINDSAY, S. & D. L. S., Prince Albert, Sask.
Dist. Surveyor and Engineer, Public Works Dept.
3. J. A. D. McCURDY, Toronto, Ont.
Curtiss Aeroplane Co.
- 1.*J. B. McFARLANE, B.A.Sc., Lake Saskatoon, Alta.
Dominion Land Surveyor.
- 3.*D. J. MCGUGAN, B.A.Sc., New Westminster, B.C.
Burnett & McGugan.
3. A. H. McINTOSH, 59 Albany Ave., Toronto, Ont.
3. F. W. McNEILL, B.A.Sc., Calgary, Alta.
Canadian General Electric Co.
- 1.*M. K. McQUARRIE, Kentville, N.S.
Engineer, D.A.R.
- 1.*G. MACLEOD,
On Overseas Service.
1. A. G. MACKAY, New York, N.Y.
With Hudson & Manhattan Ry. Co.
1. W. S. MALCOLMSON, B.A.Sc., 163 Havelock Street, Toronto, Ont.
Engineer and Surveyor.
3. S. A. MARSHALL, Welland, Ont.
6. D. H. C. MASON, B.A.Sc.,
On Overseas Service.
1. J. W. MELSON, B.A.Sc., 69 Walmsley Blvd., Toronto, Ont.
Inspector, Brown's Copper and Brass Rolling Mills, Ltd.
1. G. G. MILLS, B.A.Sc.,
On Overseas Service.
3. J. B. MINNS, B.A.Sc., Toronto, Ont.
Canadian General Electric Co.

*Diploma with honours.

1907—Continued.

- 4.*G. N. MOLESWORTH,
On Overseas Service.
1. J. M. MOORE, B.A.Sc., London, Ont.
With McClary Mfg. Co.
- 5.*P. F. MORLEY, Toronto, Ont.
Meteorological Office.
1. E. W. MURRAY, B.A.Sc., Regina, Sask.
Dept. of Public Works.
3. J. D. MURRAY, Toronto, Ont.
With Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. E. W. NEELANDS, B.A.Sc., New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. R. E. K. NEELANDS, B.A.Sc.,
On Overseas Service.
- 2.*B. NEILLY, B.A.Sc., M.E., Cobalt, Ont.
Manager, Penn-Canadian Mines.
1. A. E. NOURSE, B.A.Sc., Toronto, Ont.
3. J. J. O'SULLIVAN,
On Overseas Service.
2. T. K. PATON, Wardner, Ida.
Mining Engineer.
1. F. W. PAULIN, O.L.S., Bank of Hamilton Bldg., Hamilton, Ont.
Contractor.
1. R. B. POTTER, B.A.Sc., 235 Garden Ave., Toronto, Ont.
Asst. Engineer, Roadways Dept., City Hall.
- 3.*F. E. PROCHNOW, B.A.Sc., Buffalo, N.Y.
With Wilhelm, Parker & Ward, Patent Attorneys.
- 3.*J. F. PROCUNIER, 1232 Victoria Ave., Vancouver, B.C.
3. G. E. QUANCE, B.A.Sc., Delhi, Ont.
Secy.-Treas. of the Delhi Light & Power Co., Ltd.
- 3.*H. RAINE, Toronto, Ont.
With Prack & Perrine, Architects and Engineers.
- 1.*J. L. RANNIE, B.A.Sc., Ottawa, Ont.
Observer, Geodetic Survey.
3. C. W. B. RICHARDSON, B.A.Sc., Toronto, Ont.
Inspector, Universal Tool Steel Co.
1. A. A. RIDLER, Toronto, Ont.
Supt. Constructing & Paving Co., Ltd.
5. H. E. ROTHWELL, B.A.Sc., Toronto, Ont.
Harris Abattoir Co.
5. C. A. SCHOFIELD, Buffalo, N.Y.
Chemist, Schoellkopf-Hartford & Hanna Co.
- 1.*A. C. T. SHEPPARD,
On Overseas Service.
1. F. R. SMITH, B.A., Vancouver, B.C.
3. E. R. SMITHRIM, B.A.Sc., Strathroy, Ont.
- 1.*W. SNAITH, Toronto, Ont.
H.E.P.C.
3. A. C. SPENCER, B.A.Sc.,
On Overseas Service.
3. G. S. STEWART, Toronto, Ont.
Sales Engineer, Canadian General Electric Co.
1. J. A. STILES, B.A.Sc., Fredericton, N.B.
Professor of Civil Engineering, University of N. B.

*Diploma with honours.

1907—Continued.

- 3.*J. L. STIVER, Ottawa, Ont.
Electrical Standard Laboratory, Inland Revenue Department.
1. J. L. G. STUART, B.A.Sc., Oakville, Ont.
Resident Engineer, Toronto-Hamilton Highway.
1. G. F. SUMMERS, O.L.S., Haileybury, Ont.
Routly & Summers, Engineers and Surveyors.
- 1.*H. W. SUTCLIFFE, New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. P. M. THOMPSON, B.A.Sc., 54 Thorold St., Toronto, Ont.
3. O. R. THOMSON, B.A.Sc., Trenton, Ont.
The Electric Power Co.
1. L. R. THOMSON, B.A.Sc., Ottawa, Ont.
With Dominion Bridge Co.
1. W. J. WALKER, Grant, Ont.
With Transcontinental Ry.
1. E. D. WILKES, B.A.Sc., Toronto, Ont.
Main Drainage Department, City Hall.
3. A. F. WILSON, B.A.Sc., Cleveland, Ohio.
With Cleveland Telephone Co.
3. M. H. WOODS, B.A.Sc., Aylmer West, Ont.
1. G. W. A. WRIGHT, 65 Oakmount Bl., Toronto, Ont.
Supervisor of Prod'ns., Imperial Munitions Bd.
3. J. YOUNG, Box 2973, Winnipeg, Man.
- 3.*A. R. ZIMMER, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.

1908.

3. H. G. AKERS, B.A.Sc. (deceased).
3. L. F. ALLAN,
On Overseas Service.
- 1.*C. B. ALLISON, O.L.S., South Woodslee, Ont.
- 1.*R. M. ANDERSON, B.A.Sc.,
On Overseas Service.
5. R. J. ARENS, B.A.Sc., Akron, O.
Chemist, Firestone Tire & Rubber Co.
3. H. C. BARBER, B.A.Sc.,
On Overseas Service.
1. E. BARTLETT, B.A.Sc., Medicine Hat, Alta.
Surveyor and Civil Engineer.
2. F. J. BEDFORD (deceased).
- 1.*G. G. BELL, Pittsburg, Pa.
West. Penn. Power Co.
3. G. E. BLACK, B.A.Sc., Toronto, Ont.
Provincial Secretary's Office.
3. H. F. BOWES, Toronto, Ont.
Superintendent of Warren Bituminous Paving Co., Ltd.
- 3.*J. H. BRACE, 23 Lorne Ave., St. Lambert, P.Q.
Traffic Engineer, Bell Telephone Co.
1. P. R. BRECKEN, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1908—Continued.

3. E. I. BROWN, Toronto, Ont.
Sales Dept., Northern Electric and Manufacturing Co.
1. W. F. M. BRYCE, Ottawa, Ont.
Assistant Engineer, City Engineer's Department.
3. P. H. BUCHAN, B.A.Sc., Vancouver, B.C.
Engineering Department, B.C. Electric Ry. Co., Ltd.
2. J. E. CAMPBELL, B.A.Sc., Coldstream, Ont.
3. N. A. CAMPBELL, 629 4th Street, Edmonton, Alta.
3. A. M. CARROLL,
On Overseas Service.
1. H. R. CARSCALLEN, B.A.Sc.,
On Overseas Service.
3. G. CHALLENGE, Chedoke P.O., Hamilton, Ont.
1. F. H. CHESNUT, B.A.Sc., Burlingame, Cal.
With Eric Wold, Consulting Engineers.
1. W. E. COLE (deceased).
- 4.*W. C. COLLETT, B.A.Sc., Toronto, Ont.
Construction Engineer, British Acetones, Toronto, Ltd.
1. R. Y. CORY, B.A.Sc.,
On Overseas Service.
- 3.*H. COYNE, B.A.Sc., Racine, Wisc.
With Thomas & Thomas.
- 2.*J. D. CUMMING, B.A.Sc., Copper Cliff, Ont.
Asst. Mech. Supt., with Canadian Copper Co.
6. A. D. DAHL, B.A.Sc., Midland, Mich.
Chemist, Dow Chemical Co.
1. F. A. DANKS, Toronto, Ont.
Engineers' Office, Filtration Plant.
3. J. DARROCH, Detroit, Mich.
Draftsman, Autoparts Mfg. Co.
3. H. C. DOORLY (deceased).
2. R. H. DOUGLAS, Edmonton, Alta.
Department of Public Works.
- 2.*F. C. DYER, B.A.Sc., Toronto, Ont.
Lecturer in Mining Engineering, University of Toronto.
1. F. M. EAGLESON, Winchester, Ont.
Engineer and Surveyor.
1. C. EDWARDS, B.A.Sc., Toronto, Ont.
Sewer Dept., City Hall.
1. S. L. EVANS, B.A.Sc., Corinth, Ont.
Dominion Land Surveyor.
1. E. O. EWING, Toronto, Ont.
With York Co., Engineer.
1. O. L. FLANAGAN, B.A.Sc., Cobalt, Ont.
Engineer.
1. C. FLINT, B.A.Sc.,
On Overseas Service.
1. A. H. FOSTER, B.A.Sc., Guelph, Ont.
With Guelph St. Ry.
3. G. C. FRANCIS, Toronto, Ont.
With Canadian Fire Underwriters Ass'n.
3. S. S. GEAR, Fort Erie, Ont.

*Diploma with honours.

1908—Continued.

1. C. A. GRASSIE, B.A.Sc.,
With Kennedy & Sons. Collingwood, Ont.
- 3.*C. L. GULLEY, B.A.Sc.,
Northern Electric and Manufacturing Co. Toronto, Ont.
3. J. W. HACKNER, B.A.Sc.,
Asst. Engineer, Dept. of Public Works. Toronto, Ont.
3. F. L. HAVILAND,
Draftsman, Hamilton Bridge Works Co. Hamilton, Ont.
- 1.*C. D. HENDERSON,
Canadian Bridge Co. Walkerville, Ont.
1. E. G. HEWSON,
Division Engineer, Grand Trunk Ry. Toronto, Ont.
- 5.*D. J. HUETHER, B.A.Sc.,
With Dunlop Tire and Rubber Co. Toronto, Ont.
1. A. D. HUETHER, B.A.Sc.,
47 Highview Cres., Toronto, Ont.
- 3.*A. N. HUNTER, B.A.Sc.,
Canadian Inspection Co. Detroit, Mich.
3. S. B. ILER,
Vegreville, Alta.
- 1.*J. T. JOHNSTON, B.A.Sc.,
Hydraulic Engineer, Water Power Branch, Dept. of the Interior. Ottawa, Ont.
2. H. G. KENNEDY, B.A.Sc.,
On Overseas Service.
- 1.*W. R. KEYS,
T. & N. O. Ry. North Bay, Ont.
3. W. C. KILLIP,
On Overseas Service.
- 3.*J. N. M. LESLIE, B.A.Sc.,
With Canadian Westinghouse Co. Toronto, Ont.
3. F. C. LEWIS,
Jackson-Lewis Co. Toronto, Ont.
3. H. R. LYNAR,
Welland Ship Canal Office. St. Catharines, Ont.
- 1.*W. G. McGEORGE,
Consulting Engineer. Chatham, Ont.
1. J. M. MCGREGOR,
McCubbin & McGregor. Chatham, Ont.
1. L. A. McLEAN, B.A.Sc. (deceased).
1. W. A. A. McMASTER, A.S. & D.L.S.,
Prince Albert, Sask.
1. H. C. McMORDIE, B.A.Sc.,
On Overseas Service.
- 1.*A. A. McROBERTS, B.A.Sc.,
T. & N. O. Ry. North Bay, Ont.
- 5.*N. G. MADGE,
406 West 5th Ave., Roselle, N.J.
3. J. E. MALONE, B.A.Sc.,
With Illinois Steel Co. Chicago, Ill.
5. K. D. MARLATT,
On Overseas Service.
1. R. J. MARSHALL, B.A.Sc.,
Testing Laboratory. Toronto, Ont.
5. G. L. MILLIGAN, B.A.Sc.,
Brampton, Ont.
1. A. B. MITCHELL,
With N. MacLeod, Contractor. Orillia, Ont.
- 4.*J. C. P. MOLESWORTH (deceased).

*Diploma with honours.

1908—Continued.

3. E. D. MONK, B.A.Sc.,
General Electric Co. Cincinnati, Ohio
- 3.*F. H. MOODY, B.A.Sc.,
On Overseas Service.
3. J. H. MORICE, B.A.Sc.,
With General Electric Co. Schenectady, N.Y.
3. F. E. H. MOWBRAY, B.A.Sc.,
Canadian Westinghouse Co. Hamilton, Ont.
- 3.*W. P. MURRAY, B.A.Sc.,
On Overseas Service.
3. W. de C. O'GRADY,
Ford Motor Car Company. Calgary, Alta.
1. H. J. PECKOVER, B.A.Sc.,
Draughtsman, City Hall. 103 Cowan Ave., Toronto, Ont.
- 1.*M. PEQUEGNAT, B.A.Sc.,
Kitchener, Ont.
1. H. G. PHILLIPS, D.L.S., S.L.S.,
Smith & Phillips, Civil Engineers. Regina, Sask.
3. M. PIVNICK, B.A.Sc.,
Dentist. Toronto, Ont.
- 1.*E. M. PROCTOR, B.A.Sc.,
James, Loudon & Hertzberg. Toronto, Ont.
- 3.*C. F. PUBLOW, B.A.Sc.,
Toronto Hydro-Electric System. Toronto, Ont.
1. J. T. RANSOM, B.A.Sc.,
Provincial Highways Dept., Parliament Bldgs. Toronto, Ont.
- 1.*W. B. REDFERN, B.A.Sc.,
On Overseas Service.
1. F. L. RICHARDSON, B.A.Sc.,
With Miller, Cummings & Robertson. Toronto, Ont.
3. H. A. RICKER, B.A.Sc.,
Canadian Westinghouse Co. Hamilton, Ont.
1. A. R. ROBERTSON, B.A.Sc.,
On Overseas Service.
5. F. A. ROBERTSON,
With Canada Cement Co. Toronto, Ont.
- 1.*W. A. ROBINSON,
Right-of-Way Surveyor, C.P.R. Winnipeg, Man.
3. R. C. ROBINSON,
With C. N. Ry. Winnipeg, Man.
5. L. J. ROGERS, B.A.Sc.,
Lecturer in Applied Chemistry, University of Toronto. Toronto, Ont.
- 2.*R. R. ROSE, B.A.Sc.,
On Overseas Service.
3. D. ROSS, B.A.Sc.,
Dominion Savings Bldg., London, Ont.
1. A. O. SECORD,
Brantford, Ont.
3. W. E. V. SHAW, B.A.Sc.,
On Overseas Service.
3. H. F. SHEARER, B.A.Sc.,
Toronto Hydro-Electric System. Toronto, Ont.
1. W. L. STAMFORD, B.A.Sc.,
Inspector on Concrete Work, Hydro-Electric Power Plant. Point du Bois, Man.
3. R. H. STARR, B.A.Sc.,
Toronto Hydro-Electric System. Toronto, Ont.

*Diploma with honours.

1908—Continued.

3. A. W. J. STEWART, Toronto, Ont.
Toronto Hydro-Electric System.
3. J. ST. LAWRENCE, Erie, Pa.
General Electric Co.
1. J. J. STOCK, D.L.S.,
On Overseas Service.
1. H. B. STUART, B.A.Sc.,
On Overseas Service.
2. J. L. G. STUART, B.A.Sc., Toronto, Ont.
Railway & Special Works Department, City Hall.
3. A. D. SWORD, B.A.Sc., Toronto, Ont.
With R. J. Marshall.
3. J. W. R. TAYLOR, B.A.Sc., Toronto, Ont.
Sales Dept., Canadian Westinghouse Co.
- 1.*W. E. TAYLOR, B.A.Sc., 323 Glen Road, Toronto, Ont.
York County Engineer's Office.
3. V. C. THOMAS, B.A.Sc., 34 McRae St., Niagara Falls, Ont.
1. J. H. THORNLEY, B.A.Sc.,
On Overseas Service.
1. C. G. TOMS, B.A.Sc., 56 Spencer Ave., Toronto, Ont.
General Manager, Toms Contracting Co., Ltd.
1. H. W. TYE, Balcarres, Sask.
3. C. P. VAN NORMAN, B.A.Sc.,
On Overseas Service.
1. T. L. VILLENEUVE, Chicoutimi, Que.
Assistant Engineer, Dept. of Public Works.
1. J. A. WALKER, B.A.Sc.,
On Overseas Service.
- 3.*B. W. WAUGH, B.A.Sc.,
On Overseas Service.
3. R. M. WEDLAKE, B.A.Sc., Brantford, Ont.
With Cockshutt Plow Co., Ltd.
3. R. P. WEIR, Toronto, Ont.
Canadian Manager, Cutter Elec. and Mfg. Co.
1. A. M. WEST, B.A.Sc.,
On Overseas Service.
1. W. R. WHITE, Ottawa, Ont.
Chief Surveyor's Office, Dept. of Indian Affairs.
3. W. J. WHITE, B.A.Sc., Perth, Australia.
With British Thomson Houston Co.
- 3.*F. D. WILSON, B.A.Sc., Detroit, Mich.
1. J. M. WILSON, Toronto, Ont.
District Engineer, Dept. of Public Works of Canada.
1. D. O. WING, Vancouver, B.C.
City Engineer's Office.
- 3.*R. YOUNG, Vancouver, B.C.
With B.C. Electric Railway Co.

1909.

3. E. G. ARENS, Calgary, Alta.
With Calgary Iron Works.
3. H. V. ARMSTRONG, Estevan, Sask.
Town Engineer.
- 2.*E. T. AUSTIN, B.A.Sc., Coniston, Ont.
With the Mond Nickel Co.

*Diploma with honours.

1909—Continued.

3. W. H. BARRY, B.A.Sc., Niagara Falls, Ont.
Anderson and Barry, Engineers and Surveyors.
3. R. D. S. BECKSTEDT, B.A.Sc., Lacolle, Que.
3. R. E. BEITH,
On Overseas Service.
- 1.*G. A. BENNETT, B.A.Sc., C.E., Ottawa, Ont.
Topographical Surveys Br., Dept. of the Interior.
3. E. R. BIRCHARD, B.A.Sc.,
On Overseas Service.
3. W. D. BLACK, B.A.Sc., Montreal, Que.
Supt., Otis-Fensom Elevator Co., Ltd.
- 3.*D. C. BLIZARD, B.A.Sc., Toronto, Ont.
Supt. Mechanical Construction, Toronto Power Co.
- 1.*W. J. BOULTON, B.A.Sc., Ottawa, Ont.
Surveyor, Dept. of Interior.
3. G. H. BOWEN, B.A.Sc., Toronto, Ont.
3. C. E. BROWN, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
1. E. W. BROWNE, B.A.Sc., 247 Cannon St. E., Hamilton, Ont.
1. J. A. BUCHANAN, 140 Jasper West, Edmonton, Alta.
3. J. E. BURNS, B.A.Sc., 231 Seaton St., Toronto, Ont.
1. M. G. CAMERON, B.A.Sc., Peterboro', Ont.
- 3.*R. A. CAMPBELL, Sault Ste. Marie, Ont.
With Municipal Lighting Plant.
1. V. S. CHESNUT, B.A.Sc., St. Catharines, Ont.
Asst. Engineer, Welland Ship Canal.
- 1.*C. G. CLINE, B.A.Sc., Vancouver, B.C.
Assistant Engineer, Dept. of the Interior.
1. J. G. COLLINSON, B.A.Sc., Port Weller, Ont.
Welland Ship Canal.
1. G. W. COLTHAM, B.A.Sc., Aurora, Ont.
- 3.*H. A. COOCH, B.A.Sc.,
On Overseas Service.
3. W. E. CORMAN, Toronto, Ont.
Supt., Excelsior Electric Mfg. Co., Ltd.
3. T. H. CROSBY, B.A.Sc., Vancouver, B.C.
Sales Engineer, Canadian Westinghouse Co.
3. R. H. CUNNINGHAM, Walkerville, Ont.
Canadian Hoskins Ltd.
- 1.*F. A. DALLYN, B.A.Sc., C.E., Toronto, Ont.
Engineer, City Testing Laboratory, Board of Public Health.
3. C. N. DANKS, Sherbrooke, Que.
Asst. Engineer, Jenckes Machine Co.
1. E. M. DANN. (Died of wounds received in action, France, 1916).
3. H. W. DAVIS, Kingston, Ont.
With A. Davis & Son, Ltd., Leather Manufacturers.
- 2.*A. I. DAVIS, B.A.Sc., Toronto, Ont.
1. H. C. DAVIS, Burlington, Ont.
1. I. H. DAWSON,
On Overseas Service.
3. W. H. DELAHAYE, B.A.Sc.,
On Overseas Service.
3. W. P. DERHAM, B.A.Sc., 182 Laurier Ave. E., Ottawa, Ont.
Chief Chemist, Penman-Littlehales Chemical Co.
- 5.*W. A. DODDS, B.A.Sc. Syracuse, N.Y.

*Diploma with honours.

1909—Continued.

1. R. H. DOUGLAS, Edmonton, Alta.
Department of Public Works.
6. A. R. DUFF, Belize, British Honduras.
1. M. O. DUFF, 4 Hughson St. S., Hamilton, Ont.
2. L. J. DUTHIE,
On Overseas Service.
1. F. S. FALCONER, B.A.Sc., Ottawa, Ont.
Geological Surveys Br., Dept. of Interior.
3. T. A. FARGEY, B.A.Sc., Detroit, Mich.
With Scott Bros. Electric Co.
1. J. B. FERGUSON, B.A.Sc., Winnipeg, Man.
Eng. Dept. C.N.R.
3. A. T. FERGUSON, B.A.Sc.,
On Overseas Service.
3. T. E. FREEMAN, B.A.Sc., Montreal, Que.
Manager, Canadian Hoskins Ltd.
3. E. R. FROST, B.A.Sc., 455 King William St., Hamilton, Ont.
With H. G. Christman Co., Contractors.
1. A. E. GLOVER, B.A.Sc., Edmonton, Alta.
5. A. E. GOODERHAM, Toronto, Ont.
With Gooderham & Worts.
1. D. A. GRAHAM, B.A.Sc., Chilliwack, B.C.
Track Engineer, C.N.P.R.
2. R. R. GRANT, 961½ Gerrard St. E., Toronto, Ont.
Contractor,
1. J. E. GRAY, B.A.Sc.,
On Overseas Service.
1. G. E. D. GREENE, B.A.Sc.,
On Overseas Service.
1. W. H. GREENE, Moose Jaw, Sask.
Assistant City Engineer.
1. W. W. GUNN, B.A.Sc., 243 Quebec Ave., Toronto, Ont.
3. F. G. HAGERMAN, Cobourg, Ont.
3. C. J. HARPER, Collingwood, Ont.
Engineer and Surveyor.
1. D. W. HARVEY, B.A.Sc., Toronto, Ont.
Canada Foundry Co.
1. C. O. HAY (deceased).
- 3.*J. HEMPHILL, Magpie Mine, Ont.
Construction Engineer, Algoma Steel Corp., Mines Dept.
- 1.*G. HOGARTH, Toronto, Ont.
Chief Engineer of Highways, Dept. of Public Works of Ontario.
3. A. E. HOLMES, B.A.Sc., Montreal, P.Q.
Canadian Westinghouse Co.
3. C. R. HOLMES, B.A.Sc., Detroit, Mich.
With Electric Storage Battery Co.
1. G. C. HOSHAL, B.A.Sc., Niagara Falls, Ont.
Hydro-Electric Power Commission.
3. C. HUGHES, B.A.Sc. (killed in action, France, 1915).
1. A. E. HUNTER, B.A.Sc. (deceased).
3. H. IRWIN, B.A.Sc.,
On Overseas Service.
3. J. ISBISTER, B.A.Sc., Onaway, Mich.
Onaway Electric Light and Power Co.
3. F. P. JACKES, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1909—Continued

- 1.*J. E. JACKSON, 7 Hughson St. S., Hamilton, Ont.
 1. E. W. JAMES, B.A.Sc., Winnipeg, Man.
Bridge Engineer, Manitoba Government.
- 1.*C. C. JOHNSON, B.A.Sc., Wallaceburg, Ont.
 1. C. E. JOHNSTON, B.A.Sc. (deceased).
 1. W. J. JOHNSTON, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
- 1.*A. H. E. KEFFER, North Bay, Ont.
With T. & N.O. Ry.
3. J. B. O. KEMP, B.A.Sc., St. Catharines, Ont.
On Staff, Ridley College.
3. W. R. KEY, B.A.Sc., Toronto, Ont.
Asst. Engineer, Turnbull Elevator Co.
5. H. N. KLOTZ, B.A.Sc. (Killed in action, France, 1915).
 3. A. W. LAMONT, B.A.Sc., Winnipeg, Man.
Canadian Westinghouse Co.
- 3.*C. B. LANGMUIR, B.A.Sc., Toronto, Ont.
Manager, Electrical Dept., Factory Products, Ltd.
3. A. E. LENNOX, B.A.Sc., Cleveland, Ohio
Publicity Engineer, National Electric Lamp Association.
- 1.*R. W. E. LOUCKS, Regina, Sask.
Provincial Surveys Branch.
1. N. C. A. LLOYD, Toronto, Ont.
Brown & Brown, Surveyors.
3. E. D. MACFARLANE, B.A.Sc., Houston, Texas
With Houston Electric Ry. Co.
1. J. G. MACKINNON,
On Overseas Service.
1. W. A. MACLACHLAN, B.A.Sc.,
On Overseas Service.
3. B. A. MACLEAN, B.A.Sc., Orillia, Ont.
 1. N. W. MACPHERSON, B.A.Sc., St. Thomas, Ont.
 3. D. D. MCALPINE, B.A.Sc., 387 Markham St., Toronto, Ont.
 1. A. S. MCARTHUR, B.A.Sc.,
On Overseas Service.
3. C. R. MCCOLLUM, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
- 3.*A. S. MCCORDICK, B.A.Sc., Sault Ste. Marie, Ont.
Assistant to City Engineer.
3. P. J. MCCUAIG, B.A.Sc.,
On Overseas Service.
3. W. G. MCINTOSH, B.A.Sc., Toronto, Ont.
Herbert Morris Crane and Hoist Co.
1. F. H. McKECHNIE, B.A.Sc., 216 Wilson Ave., Montreal, Que.
 3. J. H. McKNIGHT, Simcoe, Ont.
 3. G. McLEOD, Waupaca, Wis.
Electrician, Electric Light & Ry. Co.
1. V. McMILLAN, B.A.Sc., London, Ont.
With Empire Mfg. Co.
- 3.*A. L. MALCOLM, B.A.Sc., Ottawa, Ont.
Water Power Branch, Dept. of Interior.
3. N. H. MANNING, B.A.Sc., Toronto, Ont.
Imperial Munitions Board.
- 1.*A. B. MANSON, B.A.Sc., A.M. Can. Soc. C.E., Stratford, Ont.
City Engineer.

*Diploma with honours.

1909—Continued.

1. E. S. MARTINDALE, B.A.Sc., Aylmer, Ont.
Dominion Land Surveyor.
1. O. W. MARTYN, B.A.Sc., D.L.S., S.L.S., Box 443, Swift Current, Sask.
Martyn & MacDonald.
2. C. A. MORRIS, B.A.Sc.,
On Overseas Service.
3. G. MORTON, B.A.Sc., Calgary, Alta.
Manager, Canadian Westinghouse Co.
- 1.*F. V. MUNRO, B.A.Sc., Chatham, Ont.
1. E. A. NEVILLE, B.A.Sc., Prince George, B.C.
1. J. NEWTON, B.A.Sc.,
On Overseas Service.
- 3.*L. S. ODELL, Toronto, Ont.
Imperial Munitions Board.
3. V. J. O'DONNELL, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. J. J. O'HEARN, Toronto, Ont.
Rose & O'Hearn:
1. A. W. PAE, Edmonton, Alta.
Davidson & Pae, Real Estate Brokers.
- 1.*A. M. PETRY, B.A.Sc.,
On Overseas Service.
- 3.*W. M. PHILP, B.A.Sc.,
On Overseas Service.
1. R. B. PIGOTT, B.A.Sc.
On Overseas Service.
2. G. M. PONTON, Ottawa, Ont.
Lt. Imperial Munitions Board, Explosives Dept.
- 3.*C. J. PORTER, B.A.Sc., Dallas, Texas.
With Texas Power and Light Co.
3. A. I. PROCTOR, 852 King St. E., Hamilton, Ont.
1. J. QUAIL, Winnipeg, Man.
Manitoba Bridge and Iron Works.
1. A. F. RAMSPERGER, Toronto, Ont.
With Canada Foundry Co.
- 1.*C. R. REDFERN, B.A.Sc., Toronto, Ont.
Engineer, P. Lyall & Sons, Ltd., Contractors.
- 3.*L. T. RUTLEDGE, B.A.Sc., 320 Concord Ave., Toronto, Ont.
Manager, Excelsior Electric Mfg. Co., Ltd.
1. A. U. SANDERSON, B.A.Sc., 31 Alvin Ave., Toronto, Ont.
- 3.*R. A. SARA, B.A.Sc., E.E., Winnipeg, Man.
Sales Manager, City Light and Power Dept.
- 3.*C. SCHWENGER, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
1. C. A. SCOTT,
On Overseas Service.
1. A. SEDGWICK, Toronto, Ont.
Ontario Dept. of Public Works.
1. B. H. SEGRE, B.A.Sc.,
On Overseas Service.
1. F. V. SEIBERT, B.A.Sc., Edmonton, Alta.
Engineer and Surveyor, Dept. of Interior.
5. M. R. SHAW, B.A.Sc., Waggaman, La.
Chief Chemist, Export Oil Corporation.
3. M. W. SPARLING, B.A.Sc., Cobourg, Ont.
Electric Power Co.

*Diploma with honours.

1909—Continued.

3. J. J. SPENCE, Toronto, Ont.
With Sovereign Construction Co., Ltd.
1. D. S. STAYNER, B.A.Sc., C.E.,
On Overseas Service.
- 2.*R. B. STEWART, M.A., B.A.Sc.
- 1.*N. C. STEWART, B.A.Sc., Nelson, B.C.
- 1.*P. H. STOCK, 12 Fernwood Park Ave., Toronto, Ont.
 St. Catharines, Ont.
1. J. C. STREET, B.A.Sc.,
Welland Ship Canal.
3. S. STROUD, B.A.Sc., Toronto, Ont.
With Canadian Westinghouse Co.
1. C. C. SUTHERLAND, B.A.Sc., 10714 125th St., Edmonton, Alta.
Alberta Dept. of Public Works.
1. R. G. SWAN, B.A.Sc., Vancouver, B.C.
B. C. Hydrographic Survey.
1. A. D. SWORD, B.A.Sc., Toronto, Ont.
With R. J. Marshall.
- 1.*H. W. TATE, B.A.Sc.,
On Overseas Service.
- 3.*E. A. THOMPSON, Teeswater, Ont.
 Brantford, Ont.
1. G. A. TIPPER, B.A.Sc.,
Contracting Surveyor.
3. A. G. TREES, B.A.Sc.,
On Overseas Service.
3. W. G. TURNBULL, B.A.Sc., Toronto, Ont.
Chief Engineer, Turnbull Elevator Co.
1. J. E. UNDERWOOD, Saskatoon, Sask.
McArthur, Murphy & Underwood.
1. C. P. VAN NORMAN, B.A.Sc.,
On Overseas Service.
1. J. VAN NOSTRAND, 91 Delaware Ave., Toronto, Ont.
1. A. VATCHER, B.A.Sc., Freshwater, Bay de Verde, Nfld.
With the Reid Newfoundland Co.
1. C. M. WALKER, B.A.Sc., Banff, Alta.
Dom. Land Surveyor.
1. C. E. WEBB, B.A.Sc., Vancouver, B.C.
B.C. Hydrographic Survey, Dom. Water Power Br.
1. E. E. WEBB, Box 358, Orillia, Ont.
Contractor.
3. F. C. WHITE, B.A.Sc., Walkerville, Ont.
With Canadian Bridge Co.
3. A. R. WHITELAW, B.A.Sc., 10720 103rd St., Edmonton, Alta.
1. R. G. WILKINSON, Aberarder, Ont.
- 5.*J. A. McK. WILLIAMS, B.A.Sc., Toronto, Ont.
A. E. Ames & Co.
- 1.*O. T. G. WILLIAMSON, B.A.Sc., 1345 North Shore Ave., Chicago, Ill.
3. L. R. WILSON, B.A.Sc.,
On Overseas Service.
3. F. F. WILSON, B.A.Sc., Toronto, Ont.
Surveyor.
2. S. A. WOOKEY, B.A.Sc., Schumacher, Ont.
Manager, Schumacher Mine.

1910.

2. J. H. ADAMS, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1910—Continued.

- 3.*O. F. ADAMS, B.A.Sc.,
On Overseas Service.
3. J. N. AGNEW,
On Overseas Service.
- 1.*W. G. AMSDEN, B.A.Sc.,
On Overseas Service.
1. J. A. BAIRD, B.A.Sc.,
With A. Baird, O.L.S., C.E. Leamington, Ont.
- 1.*W. J. BAIRD, B.A.Sc.,
On Overseas Service.
1. H. A. BARNETT, B.A.Sc.,
With G.T. Ry. Durand, Mich.
- 1.*E. W. BERRY,
Seaforth, Ont.
1. H. C. BINGHAM, D.L.S.,
Engineer and Surveyor. Briercrest, Sask.
2. D. G. BISSET, B.A.Sc.,
C.P.R. Coal Mines. Hosmer, B.C.
- 1.*R. H. H. BLACKWELL, B.A.Sc.,
With Wheelock & Christie. Orangeville, Ont.
- 1.*E. P. BOWMAN, B.A.Sc.,
West Montrose, Ont.
2. A. F. BROCK, B.A.Sc.,
Chief Mine Surveyor, Canadian Copper Co. Copper Cliff, Ont.
3. M. O. BROWNE,
313 McClellan Ave., Detroit, Mich.
3. J. R. BURGESS, B.A.Sc.,
On Overseas Service.
1. N. G. H. BURNHAM, B.A.Sc. (deceased).
- 3.*W. C. CALE, B.A.Sc.,
Mississippi River Power Co. Keokuk, Ia.
- 2.*A. D. CAMPBELL, B.A.Sc., M.E.,
Mining Engineer, O'Brien Mine. Cobalt, Ont.
3. W. M. CARLYLE, B.A.Sc. (killed in action, 1916).
3. N. S. CAUDWELL,
On Overseas Service.
3. A. W. CHESNUT, B.A.Sc., (Died at Shorncliffe, England, while on Overseas Service).
1. D. C. CHISHOLM, B.A.Sc.,
Resident Engineer, C.N.R. Winnipeg, Man.
1. H. S. CLARK,
On Overseas Service.
1. J. A. CLAVEAU,
Chicoutimi, Que.
3. L. S. COCKBURN, B.A.Sc.,
Engineering Dept., Pennsylvania Salt Mfg. Co. Wyandotte, Mich.
3. A. G. CODE, B.A.Sc.,
On Overseas Service.
3. C. R. COLE, B.A.Sc.,
Toronto, Ont.
1. G. A. COLQUHOUN, B.A.Sc.,
Vankleek Hill, Ont.
- 4.*J. H. CRAIG, B.A.Sc.,
On Overseas Service.
- 3.*C. D. DEAN, B.A.Sc.,
With Imperial Oil Co. 31 Hewitt Ave., Toronto, Ont.
5. A. V. DELAPORTE, B.A.Sc.,
On Overseas Service.
3. R. L. DOBBIN, B.A.Sc.,
Waterworks Dept. Peterboro', Ont.

*Diploma with honours.

1910—Continued.

- 3.*W. P. DOBSON, M.A.Sc., Toronto, Ont.
With Hydro-Electric Power Com.
- 3.*J. M. DUNCAN, B.A.Sc.,
On Overseas Service.
1. L. F. EADIE,
On Overseas Service.
2. V. H. EMERY, B.A.Sc., Timmins, Ont.
Mine Supt., Hollinger Mines.
3. W. J. EVANS, B.A.Sc., 535 Main Street E., Hamilton, Ont.
3. H. W. FAIRLIE, Winnipeg, Man.
Ry. Dept., The Northern Elec. & Mfg. Co.
- 3.*C. R. FERGUSON, B.A.Sc., Toronto, Ont.
Dominion Bridge Co.
3. J. W. FERGUSON, B.A.Sc., Brampton, Ont.
- 4.*J. B. K. FISKEN, B.A.Sc., Toronto, Ont.
1. A. W. FLETCHER, B.A.Sc.,
On Overseas Service.
- 1.*J. A. FLETCHER, Fisher River, Man.
Assistant to D. W. Robinson, D.L.S.
3. F. T. FLETCHER, B.A.Sc., Calgary, Alta.
Dept. of Public Works.
3. T. R. C. FLINT, B.A.Sc., 12 Galley Ave., Toronto, Ont.
3. R. C. FOLLETT,
2. J. M. FOREMAN, B.A.Sc., Toronto, Ont.
With R. J. Marshall.
1. W. J. FOSTER.
- 3.*W. C. FOULDS, B.A.Sc., Toronto, Ont.
Imperial Munitions Board.
1. A. FRASER, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
2. J. FREDIN, Princeton, B.C.
c/o B.C. Copper Co.
3. H. GALL, B.A.Sc.,
On Overseas Service.
1. M. M. GIBSON, B.A.Sc., Toronto, Ont.
Gibson & Gibson, O.L.S., C.E.
1. J. M. GIBSON, B.A.Sc.,
On Overseas Service.
1. V. A. E. GOAD, B.A.Sc., Montreal, P.Q.
Chas. E. Goad Co.
3. V. S. GOODEVE, Phoenix, B.C.
1. H. GOODRIDGE, Edmonton, Alta.
2. W. A. GORDON, Wallaceburg, Ont.
3. V. F. GOURLAY, B.A.Sc., Galt, Ont.
Manufacturer.
3. E. B. GRAHAM, B.A.Sc., Pittsburgh, Pa.
2. R. L. GREENE, B.A.Sc., Ottawa, Ont.
Agent, Canadian Allis-Chalmers, Ltd.
5. J. H. HARRIS, B.A.Sc., Danforth Ave., Toronto, Ont.
W. Harris & Co.
1. N. J. HARVIE, B.A.Sc. (Killed in action, France, 1916).
1. J. G. HELLIWELL (Killed in action, France, 1915).
1. J. F. HENDERSON,
On Overseas Service.
3. F. G. HICKLING, B.A.Sc., East Pittsburgh, Pa.
Westinghouse Electric & Manufacturing Co.

*Diploma with honours.

1910—Continued.

1. E. F. HINCH,
On Overseas Service.
1. O. H. HOOVER, B.A.Sc.,
On Overseas Service.
2. P. E. HOPKINS, B.A.Sc.,
With Ontario Bureau of Mines. Toronto, Ont.
- 3.*W. J. IRWIN,
2. F. L. JAMES, B.A.Sc., Tillsonburg, Ont.
3. E. A. JAMIESON,
Permanent Staff, Militia Headquarters. Ottawa, Ont.
1. H. C. JOHNSTON, 509 Palmerston Ave., Toronto, Ont.
1. R. H. JOHNSTON, B.A.Sc., 10162 116th St., Edmonton, Alta.
1. J. C. KEITH, B.A.Sc.,
City Engineer's Office. Moose Jaw, Sask.
- 2.*J. T. KING, B.A.Sc., Toronto, Ont.
Lecturer in Mining Engineering, University of Toronto.
3. G. A. KINGSTONE, B.A.Sc.,
On Overseas Service.
2. G. L. KIRWAN, B.A.Sc., Ottawa, Ont.
Topographical Surveys Br., Dept. of Interior.
5. P. T. KIRWAN, B.A.Sc., Ottawa, Ont.
Chemist, Inland Revenue Dept.
1. S. KNIGHT, B.A.Sc., Edmonton, Alta.
With Driscoll & Knight.
3. E. R. LAWLER, Toronto, Ont.
Hydro-Electric Power Comm., 190 University Ave.
- 3.*C. B. LEAVER, B.A.Sc., Sarnia, Ont.
3. R. G. LEE, B.A.Sc., Toronto, Ont.
Toronto-Hydro Electric System, 226 Yonge Street.
1. J. N. LEITCH (deceased).
1. J. C. LONGSTAFF,
On Overseas Service.
3. J. B. MACDONALD, B.A.Sc., Victoria, B.C.
With Cameron Lumber Co., Ltd.
2. A. D. MACDONALD, B.A.Sc.,
On Overseas Service.
1. J. A. MACDONALD, B.A.Sc., Ridgetown, Ont.
Private Practice.
1. G. A. MACDONALD, B.A.Sc., Vancouver, B.C.
Private Practice.
1. A. E. MACGREGOR, B.A.Sc.,
On Overseas Service.
1. E. G. MACKAY, B.A.Sc.,
On Overseas Service.
1. G. G. MACLENNAN, B.A.Sc. (Killed in action, France, 1917).
1. D. D. MACLEOD, B.A.Sc. (Died of wounds received in action, France, 1916).
3. H. G. MACMURCHY, B.A.Sc., Messina, N.Y.
- 3.*H. J. MAC TAVISH, B.A.Sc.,
On Overseas Service.
4. T. C. MCBRIDE, B.A.Sc., Calgary, Alta.
1. S. G. MCDUGALL, B.A.Sc., 47 Vittoria Street, Ottawa, Ont.
- 1.*T. A. MCELHANNEY, B.A.Sc., 706 Dominion Trust Bldg., Vancouver,
McElhanney Bros., Civil Engineers, D. & B.C. Land Surveyors. [B.C.]
- 1.*P. J. MCGARRY, D.L.S., O.L.S., Toronto, Ont.

*Diploma with honours.

1910—Continued.

- 3.*L. R. MCKIM, Brantford, Ont.
 1.*J. McNIVEN, B.A.Sc., Moose Jaw, Sask.
Resident Engineer, Dept. of Trade and Commerce.
3. J. I. MCSLOY, B.A.Sc.,
On Overseas Service.
2. A. W. R. MAISONVILLE, B.A.Sc., Montreal, Que.
Dominion Bridge Co.
- 1.*N. MARR, B.A.Sc., Campbellford, Ont.
Res. Engr., Trent Canal.
- 1.*W. H. MARTIN, B.A.Sc., Toronto, Ont.
With Curry & Sparling, Architects.
2. A. C. MATTHEWS, B.A.Sc.,
On Overseas Service.
1. C. H. MEADER, B.A.Sc., O.L.S., Toronto, Ont.
- 3.*H. O. MERRIMAN, B.A.Sc.,
On Overseas Service.
- 1.*D. J. MILLER,
On Overseas Service.
1. F. S. MILLIGAN, B.A.Sc.,
On Overseas Service.
3. P. E. MILLS, B.A.Sc., 320 W. 56th St., New York, N.Y.
3. J. P. MORGAN, Toronto, Ont.
With Orpen Construction Co.
1. F. R. MORTIMER, B.A.Sc., Ottawa, Ont.
Hydrographic Survey, Dept. of Naval Service.
1. A. H. MUNRO, B.A.Sc.,
On Overseas Service.
3. J. C. NASH, B.A.Sc.,
On Overseas Service.
- 1.*V. A. NEWHALL, B.A.Sc., Edmonton, Alta.
Dept. of Interior.
- 2.*W. E. NEWTON, B.A.Sc., Sandon, B.C.
Slocan Star Mines.
1. F. T. NICHOL, B.A.Sc.,
On Overseas Service.
1. C. M. O'NEIL, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
3. C. E. PALMER, B.A.Sc., E.E., Toronto, Ont.
Bell Telephone Co.
3. G. C. PARKER, M.A.Sc., Toronto, Ont.
Roadways Branch, Dept. of Public Works.
3. K. K. PEARCE, B.A.Sc., Lachine, Que.
Dominion Bridge Co.
1. A. W. PEARSON, Weston, Ont.
3. C. H. PHILLIPS, B.A.Sc., 85 Manchester Place, Buffalo, N.Y.
1. D. E. PYE, Cranbrook, B.C.
1. W. S. RAMSAY, B.A.Sc., 86 Robert St., Toronto, Ont.
3. B. J. REDFERN (deceased).
3. C. E. RICHARDSON, B.A.Sc.,
On Overseas Service.
1. H. C. RITCHIE, Calgary, Alta.
Dept. of Public Works.
1. O. W. ROSS, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1910—Continued.

1. W. F. B. RUBIDGE, Matheson, Ont.
Abitibi Power and Paper Co., Ltd.
3. W. C. SHAW, B.A.Sc., Toronto, Ont.
Hamilton Gear and Machine Co.
3. N. C. SHERMAN, Lindsay, Ont.
Works Manager, Arsenal.
- 1.*W. C. SMITH, B.A.Sc., C.E., Victoria, B.C.
Engineer, Water Rights Branch, Dept. of Lands.
2. F. L. SMITH,
On Overseas Service.
5. G. E. SMITH, B.A.Sc., Bozeman, Mont.
Agricultural College.
2. R. J. SPRY, B.A.Sc., Eustis Mine, Que.
2. A. L. STEELE, B.A.Sc.,
On Overseas Service.
- 2.*H. M. STEVEN, B.A.Sc.,
On Overseas Service.
- 1.*L. I. STONE, London, Ont.
Resident Engineer, G.T. Ry.
3. A. L. SUTHERLAND, B.A.Sc., Toronto, Ont.
With Canadian General Electric Co.
3. E. A. TERNAN, B.A.Sc.,
On Overseas Service.
- 5.*W. H. THOM, Toronto, Ont.
Factory Manager, Lyman Bros. & Co.
3. H. B. THOMPSON, B.A.Sc., Sarnia, Ont.
Engineering Dept., Imperial Oil Co.
3. R. M. A. THOMPSON, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Com.
- 2.*C. G. TITUS, Cobalt, Ont.
Engineer, Timiskaming Mine.
3. K. M. VAN ALLEN, B.A.Sc. (Died of wounds in German prison camp, 1916).
1. L. T. VENNEY, B.A.Sc., 35 Charles Street, Brockville, Ont.
1. N. WAGNER, 19 Gerrard St. E., Toronto, Ont.
Bridge Dept., Canada Foundry Co.
1. R. M. WALKER, B.A.Sc., Box 86, Hawkesbury, Ont.
2. T. WALTON, B.A.Sc. (deceased).
1. G. A. WARRINGTON, B.A.Sc., Winnipeg, Man.
M.L.S., Parliament Bldgs.
3. M. B. WATSON, B.A.Sc.,
On Overseas Service.
- 3.*H. M. WHITE, Lachine Locks, Que.
With Dominion Bridge Co.
1. J. L. WHITSIDE, B.A.Sc., (died of wounds received in action, 1916).
4. W. S. WICKENS, B.A.Sc., Toronto, Ont.
With Canadian Fire Underwriters Association.
- 3.*G. K. WILLIAMS, B.A.Sc. (Killed in collision at Luxeuil, while on active service, 1916).
- 1.*W. H. WILSON, B.A.Sc., Toronto, Ont.
Estimator, McGregor & McIntyre, Ltd.
3. G. E. WOODLEY (deceased).
1. G. R. WORKMAN, Toronto, Ont.
Canadian Aeroplanes, Ltd.

*Diploma with honours.

1910—Continued.

3. L. A. WRIGHT, B.A.Sc., 278 Jarvis St., Toronto, Ont.
Asst. Engineer, C.P.R.
 3.*A. W. YOEELL, B.A.Sc.,
On Overseas Service.
 1. W. S. YOUNG, B.A.Sc., Guelph, Ont.

1911.

- 5.*J. AITKEN, B.A.Sc., Brantford, Ont.
Chemist, Malleable Iron Works.
 1. L. B. ALLAN, B.A.Sc.,
On Overseas Service.
 3. E. G. ARCHER, B.A.Sc., Toronto, Ont.
With H.E.P.C.
 1. L. A. BADGLEY, B.A.Sc., Hamilton, Ont.
Chief Canadian Inspector, French Commission.
 1. T. H. BARTLEY, B.A.Sc., O.L.S., Toronto, Ont.
 2.*H. L. BATTEN, Rossland, B.C.
Cons. Mining and Smelting Co.
 1. G. L. BERKELEY,
On Overseas Service.
 3.*J. H. BILLINGS, B.A.Sc., S.M., Weston, Ont.
Lecturer in Machine Designing, University of Toronto.
 2.*J. R. BISSETT, B.A.Sc., Ottawa, Ont.
Water Power Branch, Dept. of Interior.
 3. W. O. BOSWELL, B.A.Sc., Toronto, Ont.
 1. F. BOWMAN, Lachine, Que.
Dominion Bridge Co.
 3. T. W. BRACKINREID, B.A.Sc., Winnipeg, Man.
Canadian General Electric Co.
 2. W. M. BROCK, B.A.Sc.,
On Overseas Service.
 1. W. H. D. BROUSE, B.A.Sc., Toronto, Ont.
With Kerry & Chace.
 3. H. BROWN, B.A.Sc.,
On Overseas Service.
 3.*E. T. CAIN, B.A.Sc., Moncton, N.B.
Canadian Government Railways.
 1. C. S. CAMERON, Regina, Sask.
 1. C. D. CAMPBELL, Galt, Ont.
Town Engineer.
 6.*W. W. CHADWICK, B.A.Sc., Hamilton, Ont.
Asst. Manager, Canadian Chadwick Metal Co.
 1. R. B. CHANDLER, B.A.Sc., Calgary, Alta.
With Janse Bros., Boomer, Hughes and Crain.
 1. P. G. CHERRY, B.A.Sc., Toronto, Ont.
Advertising Sales Manager, Might Directories, Ltd.
 3. E. F. CHESNUT, B.A.Sc.,
On Overseas Service.
 1. H. J. CLARK, B.A.Sc., 50 Hilda St., Hamilton, Ont.
 1. F. W. CLARK, 669 Spadina Ave., Toronto, Ont.
With Hydro-Electric Power Commission.
 3. F. S. CLEARY (deceased).
 2.*D. B. COLE, B.A.Sc., Cleveland, Ohio
Cleveland Cadillac Co.

*Diploma with honours.

1911—Continued.

- 3.*A. S. COOK, B.A.Sc., Cleveland, Ohio.
Superintendent, Construction Dept., Geo. R. Cook Co.
1. C. W. CORNELL, Toronto, Ont.
Imperial Ministry of Munitions.
1. M. E. CROUCH, 14 Algoma St., Port Arthur, Ont.
3. W. M. CRUTHERS, B.A.Sc., Peterboro', Ont.
Can. Gen. Electric Co.
1. O. F. CUMMINS, Regina, Sask.
Provincial Drainage Engineer
3. T. J. CUNERTY, 165 Broadway, New York, N.Y.
With Westinghouse Electric & Mfg. Co.
1. C. H. CUNNINGHAM, B.A.Sc., Hamilton, Ont.
1. J. H. CURZON,
On Overseas Service.
- 3.*F. K. D'ALTON, B.A.Sc., Toronto, Ont.
Sales Dept. C.G.E.
1. W. B. DAVIS, B.A.Sc., Frankford, Ont.
Trent Valley Canal.
3. F. C. DEGUERRE, B.A.Sc., Vancouver, B.C.
B.C. Electric Co.
5. L. W. DONCASTER, Toronto, Ont.
With Ault & Wiborg Co.
- 3.*F. H. DOWNING,
On Overseas Service.
1. W. B. DUNBAR, B.A.Sc.,
On Overseas Service.
5. C. H. ECKERT, B.A.Sc., 434 Queen's Ave., London, Ont.
3. J. A. ELLIOT, B.A.Sc., Niagara Falls, N.Y.
Castner Electrolytic Alkali Co.
1. G. R. ELLIOTT, B.A.Sc.,
On Overseas Service.
1. C. F. ELLIOTT, B.A.Sc.,
On Overseas Service.
1. K. A. FARRELL, B.A.Sc.,
On Overseas Service.
3. T. J. FARRELLY,
On Overseas Service.
1. S. E. FLOOK, B.A.Sc., Port Arthur, Ont.
O. L. Surveyor and Civil Engineer.
3. C. C. FLYNN, London, Ont.
5. E. L. FRANKEL, B.A.Sc., Toronto, Ont.
Frankel Bros.
2. E. E. FREELAND, B.A.Sc., Ottawa, Ont.
Hydrographic Surveys Branch.
1. J. R. FREEMAN, B.A.Sc.,
On Overseas Service.
- 4.*H. P. FRID, B.A.Sc.,
On Overseas Service.
- 3.*R. J. FULLER, B.A.Sc., Toronto, Ont.
Chief Engineer, John V. Gray Const. Co., Ltd.
- 5.*J. L. GOODERHAM, B.A.Sc., Toronto, Ont.
General Distilling Co.
3. R. E. GREEN, B.A.Sc., Toronto, Ont.
3. E. A. GREENE, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1911—Continued.

3. H. G. HALL, Woodstock, Ont.
With Hydro-Electric Power Commission.
1. G. M. HAMILTON, B.A.Sc.,
On Overseas Service.
7. M. B. HASTINGS,
On Overseas Service.
2. M. B. HEEBNER, B.A.Sc., Coquitlam, B.C.
With The Foundation Co.
2. F. I. HELSON, Newburgh, Ont.
With C.N. Ry.
3. H. R. HILL, B.A.Sc., Toronto, Ont.
Hydro-Electric System.
1. A. J. HUFF, B.A.Sc.,
On Overseas Service.
1. K. HUFFMAN, Toronto, Ont.
- 1.*H. HYATT, B.A.Sc., Toronto, Ont.
- 1.*R. H. JARVIS, B.A.Sc. (Accidentally killed while on overseas service,
 1918).
- 1.*L. E. JONES,
On Overseas Service.
- 1.*E. A. KELLY, Winnipeg, Man.
Construction Dept., C.P.R.
- 3.*M. KIRKWOOD, B.A.Sc., New York, N.Y.
Am. Telephone and Telegraph Co.
- 2.*J. LANNING, B.A.Sc.,
1. N. LAWLESS, (died of pneumonia, France, 1915).
3. W. R. LETHBRIDGE.
2. M. I. LIEBERMAN, B.A.Sc., 700 Queen's Street W, Toronto, Ont.
3. G. L. LILLIE, B.A.Sc.,
On Overseas Service.
6. A. L. LONG, B.A.Sc., Toronto, Ont.
Long Chemical Co.
- 1.*A. W. P. LOWRIE, B.A.Sc.,
On Overseas Service.
3. W. M. MACANDREW, B.A.Sc., Vancouver, B.C.
Allis-Chalmers-Bullock Co.
- 3.*R. V. MACAULAY, B.A.Sc.,
On Overseas Service.
- 2.*J. T. MACBAIN, Niagara Falls, N.Y.
Union Carbide Co.
- 1.*R. E. A. MACBETH, B.A.Sc.,
On Overseas Service.
1. F. M. MACDONALD, B.A.Sc.,
On Overseas Service.
- 3.*W. S. MACKENZIE, Woodstock, Ont.
With Canadian Linderman Co., Ltd.
- 1.*J. G. MACLAURIN, B.A.Sc., Box 621, Sault Ste. Marie, Ont.
1. J. B. MCANDREW, B.A.Sc.,
On Overseas Service.
- 3.*J. A. MCEACHREN, Strathburn, Ont.
3. R. W. MCELROY, B.A.Sc., Toronto, Ont.
3. H. J. MCEWEN, B.A.Sc., Brantford, Ont.
- 3.*W. G. MCGHIE, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1911—Continued.

3. D. A. MCKENZIE, B.A.Sc.,
With Hydro-Electric Power Com. Toronto, Ont.
2. A. J. McLAREN, B.A.Sc.,
On Overseas Service.
3. A. G. McLEISH Toronto, Ont.
- 1.*R. A. McLELLAN, B.A.Sc.,
With Murphy & Underwood. Saskatoon, Sask.
2. W. B. MCPHERSON, B.A.Sc.,
Capt., Headquarters Staff, 1st Bde. Toronto, Ont.
3. A. A. McQUEEN, B.A.Sc.,
On Overseas Service.
- 4.*H. H. MADILL, B.A.Sc.,
Major, Instructional Staff, M.D. No. 2. Toronto, Ont.
3. J. C. MARTIN, B.A.Sc.,
Northern Electric Co. Montreal, Que.
3. C. A. MEADOWS, B.A.Sc., 6 Sussex Ave., Toronto, Ont.
1. L. G. MILLS, B.A.Sc.,
On Overseas Service.
5. L. C. MITCHELL, Bay City, Mich.
2. J. A. MORPHY, B.A.Sc.,
On Overseas Service.
1. M. H. MURPHY, B.A.Sc.,
Contractor. Toronto, Ont.
1. J. C. MURTON,
On Overseas Service.
3. E. H. NIEBEL, B.A.Sc.,
Northern Electrical Co. Regina, Sask.
3. C. K. NIXON, B.A.Sc., Detroit, Mich.
3. E. S. NOBLE, B.A.Sc., Toronto, Ont.
1. R. K. NORTHEY, B.A.Sc.,
On Overseas Service.
2. W. A. O'FLYNN, B.A.Sc.,
Mond Nickel Co. Coniston, Ont.
1. W. V. OKE, B.A.Sc.,
On Overseas Service.
2. J. A. ORR, B.A.Sc., Clarkson's, Ont.
3. J. S. PARKER, B.A.Sc.,
With The Knight Bros. Co., Ltd. Burk's Falls, Ont.
- 3.*J. H. PARKIN, B.A.Sc.,
Lecturer in Mechanical Engineering, University of Toronto. Toronto, Ont.
- 1.*J. McD. PATTON, B.A.Sc., Toronto, Ont.
3. C. L. PEARSON,
With Calgary Power Co. Kananaskis, Alta.
2. S. J. PEPLER. (Killed in action, France, 1917).
- 3.*W. J. PERRIN, B.A.Sc. (deceased).
1. B. W. PICK, B.A.Sc.,
With Smith & Phillips. Regina, Sask.
- 3.*E. H. PORTE,
With Hydro-Electric Power Commission. Toronto, Ont.
- 1.*F. M. PRATT, B.A.Sc.,
On Overseas Service.
4. H. PULLAN,
With E. Pullan. Toronto, Ont.
1. L. J. QUINLAN, B.A.Sc.,
Topographical Surveys Branch, Dept. of Interior. Ottawa, Ont.

*Diploma with honours.

1911—Continued.

1. L. W. RAILTON,
On Overseas Service.
- 1.*J. E. RATZ, B.A.Sc.,
On Overseas Service.
1. F. N. READ, B.A.Sc.,
On Overseas Service.
4. E. V. REID (Killed in action, France, 1917)
- 1.*W. A. RICHARDSON, B.A.Sc.,
On Overseas Service.
- 1.*W. E. ROBINSON, B.A.Sc.,
On Overseas Service.
1. H. L. ROBLIN, B.A.Sc.,
Canadian Inspection Co. Galt, Ont.
3. L. W. ROTHERY, B.A.Sc.,
Westinghouse Machine Co. East Pittsburg, Pa.
- 4.*T. L. F. ROWE,
Structural Engineer, Hospital for Insane. Whitby, Ont.
3. A. S. RUNCIMAN,
Marconi Towers, Glace Bay, C.B.
3. F. G. RUTLEY, B.A.Sc.,
On Overseas Service.
1. E. M. SALTER,
901 Boyd Bldg., Winnipeg, Man.
1. F. R. SCANDRETT, B.A.Sc.,
Belgrave, Ont.
5. MISS H. E. SCOTT, B.A.Sc.,
Forest, Ont.
- 5.*J. W. SCOTT, B.A.Sc.,
Resident Engineer, Hudson Bay Ry.
3. N. D. SEATON, B.A.Sc.,
With General Electric Co. 360 Stewart St., Peterboro, Ont.
1. N. SHARPE,
Greater Winnipeg Water District. 501 Tribune Bldg., Winnipeg, Man.
- 4.*P. SHEARD, B.A.Sc.,
On Overseas Service.
- 1.*W. A. SIBBETT,
On Overseas Service.
- 2.*C. P. SILLS, B.A.Sc.,
On Overseas Service.
- 1.*K. H. SMITH,
Water Power Branch, Dept. of the Interior. Ottawa, Ont.
3. M. L. SMITH, B.A.Sc.,
Director of Engineering, Technical High School. Toronto, Ont.
1. R. G. SNEATH,
On Overseas Service.
- 3.*G. E. SQUIRE, B.A.Sc.,
Toronto, Ont.
3. W. S. STEELE, B.A.Sc. (deceased).
- 5.*A. E. STEWART, B.A.Sc.,
On Overseas Service.
- 3.*R. O. STEWART, B.A.Sc.,
Bridge Dept., Intercolonial Ry. Moncton, N.B.
- 3.*R. A. STORY, B.A.Sc.,
On Overseas Service.
1. C. F. SZAMMERS,
On Overseas Service.
3. R. TAYLOR, B.A.Sc.,
Science Master, Upper Canada College. Toronto, Ont.

*Diploma with honours.

1911—Continued.

1. J. B. TEMPLE, B.A.Sc., 438 Gladstone Ave., Toronto, Ont.
3. G. C. THOMAS,
On Overseas Service.
1. R. D. TORRANCE, B.A.Sc.,
On Overseas Service.
1. W. G. TOUGH, B.A.Sc.,
On Overseas Service.
- 1.*N. VICKERS. (Died of wounds received in action April, 1917).
2. J. H. C. WAITE, B.A.Sc., Toronto, Ont.
Consulting Engineer.
1. W. D. WALCOTT, B.A.Sc., Toronto, Ont.
Standard Chemical Iron & Lumber Co.
3. G. L. WALLACE, B.A.Sc., Toronto, Ont.
Demonstrator in Physics, University of Toronto.
1. A. WARDELL, B.A.Sc., Toronto, Ont.
1. F. E. WATSON, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
- 3.*P. G. WELFORD, B.A.Sc.,
On Overseas Service.
2. A. G. WHEELER, B.A.Sc., Jackson's Point, Ont.
3. G. H. WILKES, B.A.Sc.,
On Overseas Service.
- 5.*E. R. WILLIAMS,
On Overseas Service.
- 3.*H. A. WILSON, Glenora, Ont.
Supt., J. C. Wilson & Co., Mechanical Engineers.
3. C. S. WOOD, Courtenay, B.C.
Electrical Engineer.
1. W. G. WORDEN, B.A.Sc., Oshawa, Ont.
Town Engineer.
- 1.*W. J. T. WRIGHT, B.A.Sc.,
On Overseas Service.
1. F. H. WRONG, B.A.Sc., D.L.S., Sandwich, Ont.
2. W. H. WYLIE, B.A.Sc.,
On Overseas Service.
3. H. K. WYMAN,
On Overseas Service.
3. L. P. YORKE, Edmonton, Alta.
Wiring Inspector, City of Edmonton.
1. S. YOUNG, B.A.Sc., D. & S.L.S., Regina, Sask.
Public Works Dept.
- 3.*A. YOUNG, B.A.Sc., Toronto, Ont.
Instructor, Technical High School.
1. W. E. ZINKAN, 865 24th St., Edmonton, Alta.
Dominion Land Surveyor.

Owing to change of course from three to four years, there were no graduates in 1912.

1913.

- 7.*R. J. ALLEN, B.A.Sc., Toronto, Ont.
Inspector, Imperial Munitions Board.
- 3.*A. S. ANDERSON, B.A.Sc., (killed in action, France, 1916)
- 1.*C. R. AVERY, M.A.Sc.,
On Overseas Service.

*Degree with honours.

1913—Continued.

- 4.*L. C. M. BALDWIN, B.A.Sc.,
On Overseas Service.
1. F. W. BEATTY, B.A.Sc.,
On Overseas Service.
- 1.*W. B. BEATTY, B.A.Sc., O.L.S., Haliburton, Ont.
Beatty & Wilkins.
2. C. A. BELL,
On Overseas Service.
- 1.*B. S. BLACK, B.A.Sc., 197 Madison Ave., Toronto, Ont.
1. D. BLAIN, B.A.Sc.,
On Overseas Service.
7. E. R. BONTER, B.A.Sc., Montreal, Que.
Canadian Crocker-Wheeler Co.
- 7.*L. R. BRERETON, B.A.Sc.,
On Overseas Service.
2. T. R. BUCHANAN, B.A.Sc.,
On Overseas Service.
- 7.*W. B. BUCHANAN, B.A.Sc., Toronto, Ont.
Research Assistant, School of Engineering Research, University of Toronto.
3. B. H. A. BURROWS, B.A.Sc., (killed in action, France, 1916).
2. W. B. CALDWELL, B.A.Sc.,
On Overseas Service.
1. O. L. CAMERON, B.A.Sc.
On Overseas Service.
1. L. L. CAMPBELL, B.A.Sc., Orangeville, Ont.
- 3.*R. M. CARMICHAEL, B.A.Sc., Kenora, Ont.
1. G. M. CARRIE, B.A.Sc.,
On Overseas Service.
2. H. A. CLARK, B.A.Sc., Toronto, Ont.
- 6.*G. E. CLARKSON, B.A.Sc., Scunthorpe, England.
Asst. Supt. Frodingham Iron & Steel Co.
- 3.*B. D. CLEGG, B.A.Sc.,
On Overseas Service.
7. J. H. COLEMAN, B.A.Sc., 17 Farnham Ave., Toronto, Ont.
- 1.*G. M. COOK, B.A.Sc., Youngstown, Ohio.
Chief Estimator, Truscon Steel Co.
1. J. A. COOMBS, B.A.Sc., 393 Ossington Ave., Toronto, Ont.
- 4.*B. R. COON, B.A.Sc., Toronto, Ont.
Canadian Aeroplanes, Ltd.
2. W. T. CURTIS, B.A.Sc.,
On Overseas Service.
1. A. J. DATES, B.A.Sc., Detroit, Mich.
Draftsman, With Snead & Fissman.
3. H. D. DAVISON, B.A.Sc., Port Weller, Ont.
Section 1, Welland Ship Canal.
7. E. L. DEITCH, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Com.
- 2.*R. W. DIAMOND, B.A.Sc., Anaconda, Mont.
Anaconda Mining Co.
7. W. G. DUNCAN, B.A.Sc., Port Dover, Ont.
1. F. R. FIDDES, B.A.Sc., Detroit, Mich.
1. D. H. FLEMING, B.A.Sc., Toronto, Ont.
Sewers Dept. City Hall.

*Degree with honours.

1913—Continued.

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|--|-------------------------------|
| 3. F. F. FOOTE, B.A.Sc., | Port Dalhousie, Ont. |
| 1.*J. S. GALBRAITH, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 2. W. H. GARNHAM, B.A.Sc., | Cayuga, Ont. |
| 1. A. M. GERMAN, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. H. M. GOODMAN, B.A.Sc.,
<i>Sewers Dept., City Hall.</i> | Toronto, Ont. |
| 1. A. G. GRAY, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1.*E. R. GRAY, B.A.Sc., C.E.,
<i>City Engineer.</i> | Hamilton, Ont. |
| 3. A. J. GRAY, B.A.Sc.
<i>On Overseas Service.</i> | |
| 7. J. P. HADCOCK, B.A.Sc.,
<i>Can. Gen. Elec. Co.</i> | Peterboro, Ont. |
| 7. H. C. HARRIS,
<i>On Overseas Service.</i> | |
| 1. H. A. HAWLEY, B.A.Sc.,
<i>Lewis Construction Co.</i> | Toronto, Ont. |
| 1.*R. L. HEARN, B.A.Sc.,
<i>Hydro-Electric Power Com.</i> | Toronto, Ont. |
| 1.*H. J. HEINONEN, B.A.Sc.,
<i>Columbia University.</i> | New York, N.Y. |
| 3.*R. A. HENRY, B.A.Sc.,
<i>Draftsman, Dominion Bridge Co.</i> | Box 144, Lachine Locks, Que. |
| 7.*T. A. HILL, B.A.Sc., | Ninga, Man. |
| 1.*O. HOLDEN, B.A.Sc.,
<i>Hydro-Electric Power Commission.</i> | Toronto, Ont. |
| 1. J. T. HOWARD, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 7.*T. F. HOWLETT, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. E. T. IRESON, B.A.Sc., | 144 Walmer Rd., Toronto, Ont. |
| 1. G. R. JOHNSON, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. R. L. JUNKIN, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 7.*S. S. KELLY, | Lambeth, Ont. |
| 7. A. E. KERR, B.A.Sc.,
<i>Can. Westinghouse Co.</i> | Hamilton, Ont. |
| 7. C. E. KILMER, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. J. S. LAING, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 7. A. LESLIE, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 4.*H. D. LIVINGSTON, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1.*K. F. MICKLEBOROUGH, B.A.Sc.,
<i>Dept. of Railways and Canals.</i> | Cornwall, Ont. |
| 7.*G. J. MICKLER, B.A.Sc.,
<i>Hydro-Electric Commission.</i> | Toronto, Ont. |
| 1. N. C. MILLMAN, B.A.Sc.
<i>On Overseas Service.</i> | |

Degree with honours.

1913—Continued.

1. F. J. MULQUEEN, B.A.Sc.,
On Overseas Service.
- 1.*W. C. MURDIE, M.A.Sc.,
On Overseas Service.
2. D. A. S. MUTCH, B.A.Sc.,
Hollinger Mines. Timmins, Ont.
- 1.*H. R. MACKENZIE, B.A.Sc.,
Inspecting Engineer, Board of Highway Commissioners. Regina, Sask.
1. A. R. MACPHERSON, B.A.Sc.,
Petrolia, Ont.
- 6.*K. S. MACLACHLAN, B.A.Sc.,
Explosives Dept., Imperial Munitions Board. Ottawa, Ont.
1. W. H. MACTAVISH, B.A.Sc.
On Overseas Service.
1. T. V. MCCARTHY, B.A.Sc.,
On Overseas Service.
- 4.*R. S. McCONNELL, B.A.Sc.,
Architect. 12 Rosemount Ave., Toronto, Ont.
1. W. L. McFAUL, B.A.Sc.,
On Overseas Service.
- 2.*K. L. NEWTON, B.A.Sc.,
Canadian Copper Co. Copper Cliff, Ont.
- 5.*C. J. OTTO, B.A.Sc.,
Gutta Percha and Rubber Mfg. Co., Toronto, Ont.
- 1.*N. F. PARKINSON, M.A.Sc.,
On Overseas Service.
- 7.*J. W. PEART, B.A.Sc.,
61 Pearl Street, St. Thomas, Ont.
- 1.*E. PERRON, B.A.Sc.,
Metabetchouan, Que.
1. H. C. QUAIL, B.A.Sc.,
On Overseas Service.
- 7.*E. G. RATZ,
With Canadian Westinghouse Co. Hamilton, Ont.
- 1.*J. M. RIDDELL, B.A.Sc.
On Overseas Service.
- 1.*J. E. RITCHIE, B.A.Sc.,
On Overseas Service.
- 1.*C. S. ROBERTSON, M.A.Sc.,
With John ver Mehr Eng. Co., Ltd. Toronto, Ont.
- 7.*C. C. ROUS, B.A.Sc.,
Capt., Imperial Munitions Board, Head Inspector for Fuses. Royal Bank Bldg., Toronto, Ont.
7. C. H. RUSSELL, B.A.Sc.,
Can. Westinghouse Co. Hamilton, Ont.
- 7.*A. A. SCARLETT, B.A.Sc.,
Mount Charles, Ont.
- 1.*L. SEWELL, B.A.Sc.,
Cedar Grove, Ont.
- 7.*M. C. SHARP, B.A.Sc.,
On Overseas Service.
- 3.*K. E. SHAW, B.A.Sc.,
Dominion Sugar Co. Wallaceburg, Ont.
- 3.*F. R. SIMS, B.A.Sc.,
Dept. of Customs. Ottawa, Ont.
- 2.*D. G. SINCLAIR, B.A.Sc.,
145 Queen St., Sarnia, Ont.
- 4.*R. W. SOPER, B.A.Sc. (Killed in action, France, 1918).
1. W. A. SPELLMAN, B.A.Sc.,
City Engineer's Dept. Toronto, Ont.
- 7.*J. M. STRATHY, B.A.Sc., (killed in action, 1916).

*Degree with honours.

1913—Continued.

1. D. SUTHERLAND, B.A.Sc.,
On Overseas Service.
1. R. TASKER, B.A.Sc., 57 Duke Street, Toronto, Ont.
- 1.*J. M. THOMPSON, B.A.Sc. Mount Healy, Ont.
- 2.*W. K. THOMPSON, B.A.Sc., Box 218, Trail, B.C.
- 7.*D. J. THOMSON, B.A.Sc., Toronto, Ont.
Demonstrator in Mechanical Engineering, University of Toronto.
7. T. E. TORRANCE, B.A.Sc.,
On Overseas Service.
2. R. M. TROW, B.A.Sc.,
On Overseas Service.
- 1.*W. G. URE, B.A.Sc.,
- 1.*C. F. VON GUNTEN, B.A.Sc., Blenheim, Ont.
3. R. E. WATTS, B.A.Sc. (Died of scarlet fever while on active service,
1916).
- 3.*C. A. WEBSTER, B.A.Sc., Galt, Ont.
Sheldons, Limited.
- 4.*H. WEBSTER, B.A.Sc.,
On Overseas Service.
1. D. H. WEIR, B.A.Sc.
On Overseas Service.
1. W. S. WINTERS, B.A.Sc., 55 Bleecker St., Toronto, Ont.
1. R. F. B. WOOD, B.A.Sc.,
On Overseas Service.
- 7.*A. J. WRIGHT, B.A.Sc.,
On Overseas Service.
7. R. B. YOUNG, B.A.Sc., Toronto, Ont.
With H.E.P.C.

1914

1. E. M. ABENDANA, B.A.Sc.,
On Overseas Service.
- 1.*F. C. ADSETT, B.A.Sc., Guelph, Ont.
- 1.*J. L. ALTON, B.A.Sc., Toronto, Ont.
Dept. of Public Works for Ontario.
- 2.*F. C. ANDREWS, B.A.Sc. (killed in action, France, 1915).
7. C. E. ARMER, B.A.Sc., 38 Palmerston Gardens, Toronto, Ont.
With Ewart & Jacob, Elec. Engrs.
- 2.*H. R. BANKS, B.A.Sc.
On Overseas Service.
1. E. L. BEDARD, B.A.Sc., Port Lambton, Ont.
- 1.*H. J. BEDARD, B.A.Sc., Port Lambton, Ont.
1. J. T. BELCHER, B.A.Sc., Guelph, Ont.
With H.E.P.C.
1. S. G. BENNETT, B.A.Sc.,
On Overseas Service.
1. P. V. BINNS, B.A.Sc.,
On Overseas Service.
- 1.*J. M. BLYTH, B.A.Sc., R.R. No. 3, Durham, Ont.
5. A. R. BONHAM, B.A.Sc., 47 Harbord Street, Toronto, Ont.
Laboratory, Provincial Board of Health.
- 1.*J. H. W. BOWER, B.A.Sc., Ottawa, Ont.
Gen. Supt. Military Hospitals Comm.
- 3.*H. H. BROWN, B.A.Sc., Ottawa, Ont.
Steel Dept., Imperial Munitions Board.

*Degree with honours.

1914—Continued.

- 7.*W. D. BROWN, B.A.Sc., Owen Sound, Ont.
 1.*D. H. CAMPBELL, B.A.Sc., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
 3.*H. M. CAMPBELL, B.A.Sc.,
On Overseas Service.
 1.*J. J. CAMPBELL, B.A.Sc. (Died of wounds received in action, France, 1917).
 6.*C. N. CANDEE, B.A.Sc.,
On Overseas Service.
 2. R. T. CARLYLE, B.A.Sc., Toronto, Ont.
 2. J. M. CARTER, B.A.Sc.,
On Overseas Service.
 2. E. V. CHAMBERS, B.A.Sc.
On Overseas Service.
 1.*R. M. CHRISTIE, B.A.Sc., 9847 91st Ave., Edmonton South, Alta.
 3. K. M. CLIPSHAM, B.A.Sc., Toronto, Ont.
Clipsham & Delamere.
 7. C. E. B. CORBOULD, B.A.Sc.,
On Overseas Service.
 3.*E. D. W. COURTICE, B.A.Sc., 107 Bay St. S., Hamilton, Ont.
 1. J. W. CRASHLEY, B.A.Sc.
On Overseas Service.
 7.*A. W. CRAWFORD, B.A.Sc.,
On Overseas Service.
 1.*W. CUTHBERTSON, B.A.Sc.,
On Overseas Service.
 1. G. F. DALTON, B.A.Sc.,
On Overseas Service.
 1.*R. DASHWOOD, B.A.Sc.
On Overseas Service.
 1.*R. D. DAVIDSON, B.A.Sc.,
On Overseas Service.
 3. R. D. DELAMERE, B.A.Sc.,
On Overseas Service.
 1.*F. W. DOUGLAS, B.A.Sc., 276 Palmerston Ave., Toronto, Ont.
 7. H. C. EDWARDS, B.A.Sc., Toronto, Ont.
 7.*H. F. ELLIOTT, B.A.Sc., Norwood, Ont.
 1. J. A. ELLIOTT, B.A.Sc., Box 215, Nelson, B.C.
 2.*S. D. ELLIS, B.A.Sc. (Died after operation, while on overseas service, 1916).
 1.*H. E. EYRES, B.A.Sc., Peterborough, Ont.
 1.*O. M. FALLS, B.A.Sc., London, Ont.
Empire Mfg. Co.
 7. D. G. FERGUSON, B.A.Sc.,
On Overseas Service.
 1. G. O. FLEMING, B.A.Sc.,
On Overseas Service.
 2. J. S. FLEMING, B.A.Sc. (Killed in action, France, 1916).
 1.*J. L. FOREMAN, B.A.Sc., Collingwood, Ont.
 7.*H. J. FRANKLIN, B.A.Sc., 12 Chestnut St., St. Catharines, Ont.
 5.*J. G. G. FROST, B.A.Sc., Welland, Ont.
Asst. Chemist, Metals-Chemical Co.
 1. C. H. R. FULLER, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1914—Continued.

- 7.*E. I. GILL, B.A.Sc.
On Overseas Service.
- 2.*J. R. GILL, B.A.Sc.,
1. R. W. GOUINLOCK, B.A.Sc.
On Overseas Service.
7. C. I. GRIERSON, B.A.Sc.,
With Imperial Oil Company.
- 3.*W. H. HALL, B.A.Sc.,
3.*G. H. HALLY, B.A.Sc.,
On Overseas Service.
- 1.*J. J. HANNA, B.A.Sc.,
On Overseas Service.
1. J. H. HAWES, B.A.Sc.
On Overseas Service.
- 1.*L. T. HAYMAN, B.A.Sc.
On Overseas Service.
- 1.*B. B. HOGARTH, B.A.Sc.,
On Overseas Service.
4. E. E. H. HUGLI, B.A.Sc.,
On Overseas Service.
- 1.*S. A. HUSTWITT, B.A.Sc.,
On Overseas Service.
2. W. HUTCHINGS, B.A.Sc.,
Instructor in Assaying, Invalided Soldiers' Commission.
- 7.*A. S. JANNATI, B.A.Sc.,
With Hydro-Electric Power Commission.
- 1.*R. P. JOHNSON, B.A.Sc.,
Welland Ship Canal.
- 7.*J. I. KAMMAN, B.A.Sc.,
Service Dept., North East Electric Co.
1. J. KAY, B.A.Sc.,
On Overseas Service.
4. N. G. KEEFER, B.A.Sc.
On Overseas Service.
3. H. S. KERBY, B.A.Sc.,
On Overseas Service.
3. J. A. KERR, B.A.Sc.,
Polson Iron Works.
7. G. E. KEWIN, B.A.Sc.,
Canadian Inspection Co.
1. J. A. KNIGHT, B.A.Sc.,
On Overseas Service.
- 2.*S. A. LANG, B.A.Sc.,
On Overseas Service.
- 7.*C. W. LATIMER, B.A.Sc.,
1.*R. E. LINDSAY, B.A.Sc.,
On Overseas Service.
7. N. H. LORIMER, B.A.Sc.,
On Overseas Service.
- 5.*O. G. LYE, B.A.Sc.,
Laboratories Inland Revenue Dept.
- 2.*W. A. MACDONALD, B.A.Sc.,
On Overseas Service.
3. B. MACKENDRICK, B.A.Sc.,
On Overseas Service.

Sudbury, Ont.

Hamilton, Ont.

813 Water St., Peterborough, Ont.

Toronto, Ont.

Toronto, Ont.

St. Catharines, Ont.

Rochester, N.Y.

Toronto, Ont.

Toronto, Ont.

Penticton, B.C.

Ottawa, Ont.

*Degree with honours.

1914—Continued.

- 2.*H. J. MACKENZIE, B.A.Sc.
On Overseas Service.
- 7.*A. M. MACKENZIE, B.A.Sc., Montreal, Que.
Engineering Dept., Bell Telephone Co. of Canada.
1. H. N. MACPHERSON, B.A.Sc., 2,306 Rose St., Regina, Sask.
3. A. H. MACQUARRIE, B.A.Sc.
On Overseas Service.
7. J. A. MARSHALL, B.A.Sc., Ryckmans, Ont.
- 1.*J. A. P. MARSHALL, B.A.Sc.,
On Overseas Service.
- 7.*R. G. MATTHEWS, B.A.Sc.,
On Overseas Service.
- 3.*H. W. MAXWELL, B.A.Sc., 221 Wellington St., St. Mary's, Ont.
Geological Survey.
- 1.*R. C. McDONALD, B.A.Sc., Ottawa, Ont.
1. S. B. MCGILL, B.A.Sc., Toronto, Ont.
7. D. L. McLAREN, B.A.Sc., Peterborough, Ont.
With Canadian General Electric Co.
- 1.*F. C. MECHIN, B.A.Sc.,
On Overseas Service.
- 1.*W. G. MILLAR, B.A.Sc., Toronto, Ont.
With Underwriters' Association.
- 1.*A. S. MILLER, B.A.Sc.,
On Overseas Service.
- 6.*W. E. MILLIGAN, B.A.Sc.,
On Overseas Service.
- 7.*P. H. MILLS, B.A.Sc.,
On Overseas Service.
- 1.*J. S. MITCHELL, B.A.Sc.,
On Overseas Service.
1. J. R. MONTAGUE, B.A.Sc., 633 Coristine Bldg., Montreal, Que.
With A. R. Henry, M.E.
6. D. MORRISON, B.A.Sc., Bowmanville, Ont.
1. G. J. MULLINS, B.A.Sc., Toronto, Ont.
Harbour Commissioners.
- 1.*E. P. MUNTZ, B.A.Sc.,
On Overseas Service.
- 7.*C. L. NICHOLSON, B.A.Sc., 199 Concord Ave., Toronto, Ont.
Toronto Hydro-Electric System.
- 1.*J. B. NICHOLSON, B.A.Sc., Hamilton, Ont.
J. B. Nicholson, Ltd., Engineers & Contractors.
- 1.*C. NOECKER, B.A.Sc., Hamilton, Ont.
With Canadian Inspection Co.
1. J. A. OWENS, B.A.Sc., Toronto, Ont.
1. A. H. PARKER, B.A.Sc.,
On Overseas Service.
- 1.*R. G. PATTERSON, B.A.Sc.
On Overseas Service.
- 7.*J. D. PEART, B.A.Sc.
On Overseas Service.
1. C. W. PENNINGTON, B.A.Sc., Dundas, Ont.
- 1.*C. V. PERRY, B.A.Sc. (Killed in action, 1917).
- 5.*W. E. PHILLIPS, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1914—Continued

8. G. O. PHILP, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
1. P. H. RANEY, B.A.Sc. (Killed in action, Belgium, 1917).
1. R. H. RICE, B.A.Sc.,
On Overseas Service.
7. A. S. ROBERTSON, B.A.Sc., Toronto, Ont.
With H.E.P.C.
- 4.*J. M. ROBERTSON, B.A.Sc.,
On Overseas Service.
7. H. D. ROTHWELL, B.A.Sc., North Bay, Ont.
Hydro-Electric Power Com.
1. F. S. RUTHERFORD, B.A.Sc.,
On Overseas Service.
- 3.*J. G. SCOTT, B.A.Sc. (Died while on overseas service, 1918).
- 7.*F. M. SERVOS, B.A.Sc., Niagara-on-the-Lake, Ont.
- 1.*H. L. SHEPPARD, B.A.Sc.
On Overseas Service.
1. N. E. D. SHEPPARD, B.A.Sc., Ottawa, Ont.
Water Power Branch, Dept. of Interior.
1. S. SHUPE, B.A.Sc., Dunnville, Ont.
County Engineer.
6. A. W. SIME, B.A.Sc.
On Overseas Service.
- 1.*B. N. SIMPSON, B.A.Sc.
On Overseas Service.
1. C. E. SINCLAIR, B.A.Sc.
On Overseas Service.
- 1.*J. B. SKAITH, B.A.Sc.,
On Overseas Service.
- 4.*W. C. SKINNER, B.A.Sc., 1022 Cass Ave., Detroit, Mich
1. H. M. SMITH, B.A.Sc. (deceased).
2. G. M. SMYTH, B.A.Sc.,
On Overseas Service.
- 1.*N. L. SOMERS, B.A.Sc., Sault Ste. Marie, Ont.
Coke Plant Engr., Algoma Steel Corp.
7. R. O. STANDING, B.A.Sc.,
On Overseas Service.
- 7.*E. C. R. STONEMAN, B.A.Sc.,
On Overseas Service.
1. I. R. STROME, B.A.Sc.,
On Overseas Service.
3. S. G. TACKABERRY, B.A.Sc., Ottawa, Ont.
Dept. of Public Works.
2. J. S. TAYLOR, B.A.Sc. (Killed in action, France, 1916).
- 1.*C. N. TEMES, B.A.Sc., 432 College Street, Toronto, Ont.
- 3.*E. H. TENNENT, B.A.Sc., 456 Ridout Street, London, Ont.
1. J. A. TILSTON, B.A.Sc.,
On Overseas Service.
- 1.*G. E. TRELOAR, M.A.Sc., Toronto, Ont.
- 7.*W. S. TULL, B.A.Sc., Louisburg, N.S.
Marconi Wireless Telegraph Co.
6. E. A. TWIDALE, B.A.Sc. (Killed in action, France, 1917).
- 1.*F. T. VAN DYKE, B.A.Sc., St. Catharines, Ont.
Section 1, Welland Ship Canal.

*Degree with honours.

1914—Continued.

- 3.*M. F. VERITY, B.A.Sc.
On Overseas Service.
- 1.*H. O. WADDELL, B.A.Sc., Port Hope, Ont.
1.*H. W. WAGNER, B.A.Sc., 108 Springhurst Ave., Toronto, Ont.
1.*H. D. M. WALLACE, B.A.Sc. (Killed in action, 1917).
1. P. L. WHITLEY, B.A.Sc.,
On Overseas Service.
- 6.*A. E. WIGLE, B.A.Sc., Nobel, Ont.
Canadian Explosives Limited.
- 7.*J. A. H. WIGLE, B.A.Sc. Kingsville, Ont.
4.*A. C. WILSON, B.A.Sc., Toronto, Ont.
Office of City Architect.
1. H. P. WILSON, B.A.Sc., Toronto, Ont.
Canadian Inspection Co.
- 2.*R. W. YOUNG, B.A.Sc., Rancagua, Chili, S.A.
With Braden Copper Co.

1915

1. L. S. ADLARD, B.A.Sc.,
On Overseas Service.
1. A. C. ANDERSON, B.A.Sc.,
On Overseas Service.
- *1.*G. A. ARKSEY, B.A.Sc.,
On Overseas Service.
2. R. M. ARTHUR, B.A.Sc.,
On Overseas Service.
1. F. D. AUSTIN, B.A.Sc.,
On Overseas Service.
7. W. V. BALL, B.A.Sc.,
On Overseas Service.
- 7.*T. R. BANBURY, B.A.Sc.,
On Overseas Service.
7. V. A. BEACOCK, B.A.Sc.,
On Overseas Service.
- 1.*P. BENNETT, B.A.Sc.,
On Overseas Service.
- 7.*H. M. BLACK, B.A.Sc., Toronto, Ont.
Shell Dept., Universal Tool Steel Co.
7. W. H. BONUS, B.A.Sc., Toronto, Ont.
Asst. Superintendent, University of Toronto.
- 6.*J. E. BREITHAUP, B.A.Sc. Kitchener, Ont.
With Breithaupt Tanning Co.
- 1.*E. D. G. BROUSE, B.A.Sc.,
On Overseas Service.
- 1.*L. R. BROWN, B.A.Sc., Sault Ste. Marie, Ont.
Toronto Chemical Co.
- 1.*F. M. BUCHANAN, B.A.Sc., Sydney, N.S.
With Dominion Tar and Chemical Co.
7. H. C. BUDD, B.A.Sc.,
On Overseas Service.
4. H. J. BURDEN, B.A.Sc.,
On Overseas Service.
1. F. N. D. CARMICHAEL, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1915—Continued.

- 4.*R. W. CATTO, B.A.Sc.
On Overseas Service.
1. R. M. COCKBURN, B.A.Sc.,
On Overseas Service.
- 1.*J. D. COOK, B.A.Sc.,
With Massey Harris Co. Toronto, Ont.
- 1.*A. B. CREALOCK, B.A.Sc.,
Canadian Inspection Co. Toronto, Ont.
- 1.*W. R. DA COSTA, B.A.Sc.,
On Overseas Service.
1. N. H. DANIEL, B.A.Sc.,
On Overseas Service.
- 3.*C. G. DAVEY, B.A.Sc.,
Canadian Inspection Co. London, Ont.
- 7.*G. P. DAVIDSON, B.A.Sc. (Killed in action, 1917).
4. J. J. DAVIDSON, B.A.Sc.,
On Overseas Service.
7. W. A. DEAN, B.A.Sc.,
On Overseas Service.
- 1.*E. V. DEVERALL, B.A.Sc.,
On Overseas Service.
- 7.*J. DIBBLEE, B.A.Sc.,
With H.E.P.C. Toronto, Ont.
- 1.*W. L. DICKSON, B.A.Sc.,
Canadian Inspection Co. St. Catharines, Ont.
- 1.*G. A. DOWNEY, B.A.Sc.,
On Overseas Service.
4. G. R. EDWARDS, B.A.Sc.,
On Overseas Service.
- 7.*R. V. ELLIOTT, B.A.Sc.,
On Overseas Service.
2. E. R. EMMERSON, B.A.Sc.,
Port Arthur, Ont.
1. A. C. EVANS, B.A.Sc.,
On Overseas Service.
1. H. S. FALCONER, B.A.Sc.,
Shelburne, Ont.
7. D. T. FLANNERY, B.A.Sc.,
Deloro Mining and Reduction Co. Deloro, Ont.
1. J. W. H. FORD, B.A.Sc.,
London, Ont.
- 1.*W. R. FRASER, B.A.Sc.,
With G. T. Ry. Allandale, Ont.
1. W. G. FRENCH, B.A.Sc.,
On Overseas Service.
- 1.*W. J. FULTON, B.A.Sc.,
G. S. Abrey, O.L.S. Toronto, Ont.
1. R. D. GALBRAITH, B.A.Sc.,
On Overseas Service.
1. C. N. GEALE, B.A.Sc.,
On Overseas Service.
6. L. G. GLASS, B.A.Sc.,
On Overseas Service.
1. G. A. GOODERHAM, B.A.Sc.,
On Overseas Service.
- 7.*W. H. R. GOULD, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1915—Continued.

- 4.*T. S. GRAHAM, B.A.Sc.
On Overseas Service.
- 1.*E. R. GRANGE, B.A.Sc.,
On Overseas Service.
1. E. D. GRAY, B.A.Sc., Toronto, Ont.
Imperial Oil Co.
7. G. D. GRAY, B.A.Sc., Welland, Ont.
Union Carbide Co.
3. J. GRAY, B.A.Sc.,
On Overseas Service.
7. G. E. GRIFFITHS, B.A.Sc.,
On Overseas Service.
2. M. S. HAAS, B.A.Sc.,
On Overseas Service.
2. D. S. HALFORD, B.A.Sc., Humboldt, Ariz.
Consolidated Arizona Smelting Co.
- 2.*W. T. HALL, B.A.Sc. (Killed in action, France, 1917).
- 2 *J. E. HANLON, B.A.Sc.,
On Overseas Service.
1. C. HAYWARD, B.A.Sc., Sault Ste. Marie, Ont.
- 2.*L. T. HIGGINS, B.A.Sc., Rancagua, Chili.
Braden Copper Co.
- 1.*C. E. HOGARTH, B.A.Sc.,
On Overseas Service.
7. T. P. IRELAND, B.A.Sc., Hamilton, Ont.
Canadian Inspection Co.
- 7.*G. A. IRONSIDE, B.A.Sc.
On Overseas Service.
- 1.*C. W. H. JACKSON, B.A.Sc.,
On Overseas Service.
7. K. A. JEFFERSON, B.A.Sc., London, Ont.
Empire Mfg. Co.
- 1.*G. W. F. JOHNSTON, B.A.Sc.,
On Overseas Service.
7. C. M. JONES, B.A.Sc., Toronto, Ont.
1. E. H. JUPP, B.A.Sc.,
On Overseas Service.
7. C. R. KEYS, B.A.Sc., Toronto, Ont.
Curtiss Aeroplanes and Motors Ltd.
- 5.*H. KOHL, B.A.Sc., Longford, Ont.
Standard Chemical Co.
- 1.*R. E. LAIDLAW, B.A.Sc., Toronto, Ont.
With McCarthy & McCarthy.
- 1.*G. J. LAMB, B.A.Sc., 315 St. Vincent St., Port Arthur, Ont.
Asst. City Engineer.
- 7.*G. W. LAWRENCE, B.A.Sc.,
On Overseas Service.
- 1.*H. O. LEACH, B.A.Sc.,
On Overseas Service.
- 3.*R. H. LLOYD, B.A.Sc.,
On Overseas Service.
1. W. E. LOCKHART, B.A.Sc. (Killed in action, France, 1917).
- 1.*W. E. LONGWORTHY, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1915—Continued.

- 1.*C. T. LOUNT, B.A.Sc., Regina, Sask.
- 1.*R. G. LYE, B.A.Sc.,
On Overseas Service.
- 1.*C. A. MACDONALD, B.A.Sc.,
On Overseas Service.
2. I. M. MACDONELL, B.A.Sc.,
On Overseas Service.
- 1.*H. E. MACPHERSON, B.A.Sc., St. Thomas, Ont.
- 1.*W. R. McCAFFREY, B.A.Sc.,
On Overseas Service.
- 1.*C. R. McCORT, B.A.Sc.,
On Overseas Service.
- 1.*J. P. McDONALD, B.A.Sc., Ottawa, Ont.
Topographical Surveys Br., Dept. of the Interior.
- 1.*K. D. McDONALD, B.A.Sc.,
On Overseas Service.
- 3.*W. R. McGIE, B.A.Sc.,
On Overseas Service.
- 1.*D. F. MCGUGAN, B.A.Sc.,
On Overseas Service.
7. J. S. McINTYRE, B.A.Sc., Toronto, Ont.
With H.E.P.C.
1. E. V. McKAGUE, B.A.Sc.,
On Overseas Service.
7. E. T. MARTIN, B.A.Sc., Waddington, N.Y.
- 1.*W. H. MEITZ, B.A.Sc., Detroit, Mich.
Albert Albrecht Co.
2. F. L. MILLS, B.A.Sc.
On Overseas Service.
- 1.*G. MITCHELL, B.A.Sc.
On Overseas Service.
1. J. T. MOGAN, B.A.Sc.,
On Overseas Service.
- 7.*E. M. MONTEITH, B.A.Sc., Toronto, Ont.
Imperial Oil Co.
- 4.*A. MORRIS, B.A.Sc.,
On Overseas Service.
1. B. M. MORRIS, B.A.Sc. (Killed in action, France, 1917).
- 5.*W. D. MORRIS, B.A.Sc., Gretna, England.
Chemical Engineer, H.M. Explosives Factory.
2. J. M. MUIR, B.A.Sc.,
On Overseas Service.
- 1.*M. A. NEILSON, B.A.Sc., Toronto, Ont.
Inspector, W. H. Banfield & Sons.
- 1.*H. S. NICKLIN, B.A.Sc.,
On Overseas Service.
1. E. B. O'CONNOR, B.A.Sc., Toronto, Ont.
1. W. M. OMAND, B.A.Sc., Armco, Middleton, Ohio.
East Side Works.
- 1.*R. A. PAUL, B.A.Sc.,
On Overseas Service.
- 3.*A. N. PAYNE, B.A.Sc., Toronto, Ont.
1. L. P. PEARCE, B.A.Sc.,
On Overseas Service.

* Degree with honours.

1915—Continued.

- 1.*H. M. PECK, B.A.Sc., Toronto, Ont.
 1. S. M. PETERKIN, B.A.Sc.,
On Overseas Service.
- 1.*C. F. PORTER, B.A.Sc., Windsor, Ont.
 1.*J. E. PORTER, B.A.Sc., Wingham, Ont.
 2. W. D. POWELL, B.A.Sc., Brantford, Ont.
Dominion Steel Products Co.
7. W. F. P. PURDY, B.A.Sc., Wardsville, Ont.
 1. W. E. RALEY, B.A.Sc. (Died of wounds received in action, 1916).
 1. C. C. RANCE, B.A. Sc., Toronto, Ont.
Imperial Munitions Board.
- 1.*G. RANKIN, B.A.Sc.,
On Overseas Service.
1. W. B. REDMAN, B.A.Sc.,
On Overseas Service.
- 3.*F. G. REID, B.A.Sc., Cleveland, Ohio.
Frantz Premier Co.
6. P. J. RELYEA, B.A.Sc., London, England.
Imperial Munitions Board.
- 1.*A. A. RICHARDSON, B.A.Sc.
On Overseas Service.
- 3.*A. S. ROBERTSON, B.A.Sc.,
On Overseas Service.
1. J. T. ROSE, B.A.Sc.
On Overseas Service.
- 7.*A. C. ROSS, B.A.Sc., Toronto, Ont.
Willys-Overland, Ltd.
- 1.*H. M. ROWE, B.A.Sc.,
On Overseas Service.
4. G. W. RUTTER, B.A.Sc.,
On Overseas Service.
- 7.*E. W. SAVAGE, B.A.Sc.,
On Overseas Service.
7. A. G. SCOTT, B.A.Sc.,
On Overseas Service.
- 1.*E. H. SCOTT, B.A.Sc.,
On Overseas Service.
- 1.*R. G. SCOTT, B.A.Sc.,
On Overseas Service.
7. N. F. SEYMOUR, B.A.Sc.,
On Overseas Service.
- 1.*J. H. SHAW, B.A.Sc., Toronto, Ont.
With T. Eaton Co.
1. J. S. SHEEHY, B.A.Sc., Buffalo, N.Y.
With Buffalo Copper and Brass Rolling Co.
3. W. G. SHIER, B.A.Sc. (Died of wounds received in action, 1916).
 1.*C. N. SIMPSON, B.A.Sc., Toronto, Ont.
 1. R. B. SINCLAIR, B.A.Sc.,
On Overseas Service.
3. A. H. SMYTH, B.A.Sc., Strathroy, Ont.
 7.*W. A. STEEL, B.A.Sc.,
On Overseas Service.
2. J. B. STITT, B.A.Sc., Rancagua, Chili.
Braden Copper Co.

*Degree with honours.

1915—Continued.

3. J. D. STONE, B.A.Sc.,
On Overseas Service.
- 7.*G. C. STOREY, B.A.Sc.,
On Overseas Service.
- 2.*J. E. C. STROUD, B.A.Sc.,
With Granby Consol'd Mining and Smelting Co. Anyox, B.C.
- 7.*A. N. SUHLER, B.A.Sc., Pt. Edward, Ont.
7. A. N. TAYLOR, B.A.Sc.,
Canadian Inspection Co. Toronto, Ont.
1. L. B. TILLSON, B.A.Sc.,
On Overseas Service.
1. J. A. TOM, B.A.Sc.,
On Overseas Service.
- 5.*W. UFFELMANN, B.A.Sc.,
Penman-Littlehales Chemical Co. Syracuse, N.Y.
- 7.*A. L. WARD, B.A.Sc.
On Overseas Service.
- 1.*F. E. WEIR, B.A.Sc.,
On Overseas Service.
- 1.*C. W. WEST, B.A.Sc.
On Overseas Service.
1. J. N. WILLIAMS, B.A.Sc.,
On Overseas Service.
- 1.*J. C. WILSON, B.A.Sc., Wingham, Ont.
- 1.*H. A. WOOD, B.A.Sc.
On Overseas Service.
7. H. K. WYMAN, B.A.Sc.,
On Overseas Service.

1916.

1. E. B. ALLAN, B.A.Sc.,
On Overseas Service.
7. F. W. BALL, B.A.Sc., 24 Edward St. London, Ont.
1. L. F. BARNES, B.A.Sc.,
On Overseas Service.
1. B. W. BEMROSE, B.A.Sc.,
On Overseas Service.
- 5.*W. G. BIRRELL, B.A.Sc., Toronto, Ont.
Demonstrator in Electrochemistry, University of Toronto.
- 8.*D. BOYD, B.A.Sc., 348 Albany Ave., Toronto, Ont.
3. H. E. BREULS, B.A.Sc., Toronto, Ont.
Canadian Aeroplanes, Ltd.
- 5.*N. B. BROWN, B.A.Sc., Shawinigan, Que.
Shawinigan Electro Metals Co.
3. J. R. CHAPMAN, B.A.Sc. (killed in action, France, 1917).
- 7.*K. CUMMING, B.A.Sc., Glace Bay, N.S.
Marconi Wireless Telegraph Co.
3. J. N. CUNNINGHAM, B.A.Sc. (killed in action, France, 1917).
1. R. S. DALE, B.A.Sc., Toronto, Ont.
Paterson Mfg. Co.
- 7.*L. G. DANDENO, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
3. J. L. DELISLE, B.A.Sc., Chicoutimi, Que.
With Chicoutimi Pulp Co.

*Degree with honours.

1916—Continued.

1. W. L. DOBBIN, B.A.Sc.,
On Overseas Service.
1. J. H. EASTWOOD, B.A.Sc.,
On Overseas Service.
7. R. L. FLEGG, B.A.Sc., Montreal, Que.
1. D. B. GARDNER, B.A.Sc.,
On Overseas Service.
- 7.*E. G. GURNETT, B.A.Sc., Toronto, Ont
With Hydro-Electric Power Commission.
- 1.*M. GUROFSKY, B.A.Sc. Box 550, Timmins, Ont.
1. G. C. HAGEDORN, B.A.Sc.,
On Overseas Service.
1. R. M. HARE, B.A.Sc., 247 Brunswick Ave., Toronto, Ont.
1. L. W. HARRON, B.A.Sc.,
On Overseas Service.
1. C. E. HASTINGS, B.A.Sc.,
On Overseas Service.
4. R. T. C. HOIDGE, B.A.Sc.,
On Overseas Service.
7. S. HUBBERT, B.A.Sc.
On Overseas Service.
1. K. B. JACKSON, B.A.Sc.,
On Overseas Service.
- 7.*H. C. KARN, B.A.Sc., Montreal, P.Q.
Northern Electric Co.
7. G. F. KING, B.A.Sc.,
On Overseas Service.
1. J. R. KIRBY, B.A.Sc.,
On Overseas Service.
1. R. W. KIRBY, B.A.Sc.,
On Overseas Service.
3. R. W. KIRN, B.A.Sc.,
On Overseas Service.
6. S. J. KRUG, B.A.Sc.,
On Overseas Service.
1. L. A. C. LEE, B.A.Sc.,
On Overseas Service.
- 2.*B. A. MCCRODAN, B.A.Sc.,
On Overseas Service.
3. R. A. MACDONALD, B.A.Sc.,
On Overseas Service.
- 1.*O. MARGISON, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
- 1.*W. B. MITCHELL, B.A.Sc., 150 Wharncliffe Rd., London, Ont.
- 1.*C. H. NEY, B.A.Sc.,
On Overseas Service.
3. J. C. NEWCOMBE, B.A.Sc. (Killed in action, France, 1918).
7. G. E. NOTT, B.A.Sc.,
On Overseas Service.
1. E. A. O'CALLAGHAN, B.A.Sc., Cornwall, Ont.
- 6.*C. E. OLIVER, B.A.Sc., Quyon, Que.
Canadian Wood Molybdenite Co.
1. N. L. POWELL, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1916—Continued.

1. J. E. PRINGLE, B.A.Sc.,
On Overseas Service.
7. J. RICHMOND, B.A.Sc.,
Northern Electric Co. Montreal, Que.
1. H. C. ROSE, B.A.Sc.,
On Overseas Service.
- 1.*S. R. ROSS, B.A.Sc.,
175 Brunswick Ave., Toronto, Ont.
7. S. W. ROSS, B.A.Sc.,
213 Beverley Street, Toronto, Ont.
- 3.*J. P. RUSSELL, B.A.Sc.,
27 Whitney Ave., Toronto, Ont.
1. W. B. SCOTT, B.A.Sc.,
764 Logan Ave., Toronto, Ont.
- 1.*R. L. SEABORNE, B.A.Sc.,
Box 174, Quebec, Que.
Manager, Laurentian Forest Production Ass'n.
- 1.*R. L. SIEVEWRIGHT, B.A.Sc.,
304 Hogarth Ave., Detroit, Mich.
4. J. L. SKINNER, B.A.Sc.,
1022 Cass Ave., Detroit, Mich.
7. W. A. SMELSER, B.A.Sc.,
Toronto, Ont.
Co. Sgt.-Major Instructor, Canadian School of Musketry.
1. W. H. STARK, B.A.Sc.,
On Overseas Service.
- 1.*J. A. SUREDA, B.A.Sc.,
Utuado, Porto Rico.
1. J. E. TREMAYNE, B.A.Sc.,
On Overseas Service.
- 5.*F. W. WARD, B.A.Sc.,
Toronto, Ont.
Laboratory Attendant, Dept. of Biochemistry, University of Toronto.
- 1.*R. C. WARD, B.A.Sc.,
Toronto, Ont.
Toronto Iron Works.
7. A. R. WELLS, B.A.Sc.,
On Overseas Service.
- 7.*H. S. WEPPLER, B.A.Sc.,
Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
7. A. E. WIDDICOMBE, B.A.Sc.,
On Overseas Service.

1917.

- 1.*H. A. BABCOCK, B.A.Sc.,
Chatham, Ont.
Canadian Des Moines Field Co.
4. J. BANIGAN, B.A.Sc.,
Toronto, Ont.
Banigan, Mathers & Thompson.
- 1.*A. E. BERRY, B.A.Sc.,
On Overseas Service.
- 1.*R. S. C. BOTHWELL, B.A.Sc.,
Ojibway, Ont.
Canadian Steel Corporation.
7. H. S. BROWN, B.A.Sc.,
Ottawa, Ont.
Radiotelegraph Branch, Dept. of Naval Service.
7. S. W. BUMSTEAD, B.A.Sc.,
Ottawa, Ont.
Imperial Ministry of Munitions.
- 1.*F. C. Christie, B.A.Sc.,
Fort William, Ont.
Asst. Supt., Fegles-Bellows Eng. Co., Ltd.
7. J. C. COLLERAN, B.A.Sc.,
280 Park St., Port Arthur, Ont.
1. E. H. CORMAN, B.A.Sc.,
R.R. No. 5, Hamilton, Ont.
- 5.*J. V. DICKSON, B.A.Sc.,
Toronto, Ont.
Research Assistant, School of Engineering Research, University of Toronto.
1. J. A. FRASER, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1917—Continued.

7. J. I. GRAM, B.A.Sc., Ottawa, Ont.
Imperial Ministry of Munitions.
1. W. K. GREATREX, B.A.Sc., Toronto, Ont.
Imperial Munitions Board.
2. G. HANMER, B.A.Sc., Ralph, Sask.
 3. A. B. HARRIS, B.A.Sc., 974 Danforth Ave., Toronto, Ont.
1. R. W. HARRIS, B.A.Sc., Toronto, Ont.
C. H. & P. H. Mitchell.
5. A. J. HOLDEN, B.A.Sc., Toronto, Ont.
British Acetones Toronto, Ltd.
- 1.*R. W. HURLBURT, B.A.Sc., Toronto, Ont.
With R. J. Marshall.
7. G. F. HUTCHESON, B.A.Sc., Ottawa, Ont.
Imperial Ministry of Munitions.
7. L. LEVESQUE, B.A.Sc., Chandler, Que.
St. Lawrence Pulp & Lumber Co.
3. S. G. McCANDLISH, B.A.Sc., 21 Smith Ave., Hamilton, Ont.
- 2.*H. L. McCLELLAND, B.A.Sc., Haileybury, Ont.
3. P. E. McILHARGEY, B.A.Sc., Toronto, Ont.
Aero Inspection Dept., Canadian Aeroplanes, Ltd.
5. G. G. MACDONALD, B.A.Sc., Sault Ste. Marie, Ont.
Imperial Ministry of Munitions.
- 1.*R. C. MANNING, B.A.Sc., 203 Hunter St. W., Hamilton, Ont.
- 4.*A. S. MATHERS, B.A.Sc., Toronto, Ont.
Banigan, Mathers & Thompson.
1. J. E. O'BRIEN, B.A.Sc.,
On Overseas Service.
- 7.*W. A. R. OFFERHAUS, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
1. H. A. PARR, B.A.Sc., Toronto, Ont.
Canadian Aeroplanes, Ltd.
- 1.*R. D. RATZ, B.A.Sc., Toronto, Ont.
With R. J. Marshall.
1. E. E. SMITH, B.A.Sc., Sault Ste. Marie, Ont.
City Engineer's Office.
7. E. W. SMITHSON, B.A.Sc., Ottawa, Ont.
Imperial Ministry of Munitions.
- 3.*A. M. SNIDER, B.A.Sc., Sherbrooke, Que.
Can. Ingersoll Rand Co.
1. R. M. SPEIRS, B.A.Sc., Toronto, Ont.
With Canadian Aeroplanes, Ltd.
3. A. W. SWAN, B.A.Sc., Sherbrooke, Que.
Can. Ingersoll Rand Co.
1. A. P. THOMSON, B.A.Sc., Toronto, Ont.
With Willys-Overland, Ltd.
- 1.*C. E. TILSTON, B.A.Sc., 94 Givens St., Toronto, Ont.
7. O. W. TITUS, B.A.Sc.,
On Overseas Service.
2. B. C. TOMLINSON, B.A.Sc., Creighton Mines, Ont.
- 1.*V. TOPPING, B.A.Sc.,
On Overseas Service.
- 7.*A. A. TUFFORD, B.A.Sc., Toronto, Ont.
On Overseas Service.

*Degree with honours.

1917—*Continued.*

- | | |
|--|---------------|
| 7. H. A. TUTTLE, B.A.Sc. | |
| <i>On Overseas Service.</i> | |
| 5. E. J. TYRRELL, B.A.Sc., | Toronto, Ont. |
| <i>Research Chemist, T. Eaton Co.</i> | |
| 4.*H. R. WATSON, B.A.Sc., | Toronto, Ont. |
| <i>Staff of Technical High School.</i> | |
| 1. G. WOOD, B.A.Sc., | |
| <i>On Overseas Service.</i> | |

*Degree with honours.

CERTIFICATES.

MINERALOGY AND ASSAYING.

1896. G. JOHNSTON.
 1897. E. B. WEBSTER.
 1901. G. A. HUNT.

ELECTRICITY.

- | | |
|---|-----------------------|
| 1896. A. T. TYE, c/o Empresa Hanseatica, Barranquilla, Columbia, South America. | |
| 1898. A. N. McMILLAN, | Penetanguishene, Ont. |
| 1900. A. H. SMITH. | |
| 1896. E. I. SIFTON, | London, Ont. |
| <i>Manager, London Electric Construction Co.</i> | |
| 1903. W. ELWELL (deceased). | |

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A

Abendana, E. M.....	1914	Anderson, R. M.....	1908
Acres, H. G.....	1903	Anderson, A. S. (deceased)....	1913
Adams, J. H.....	1910	Andrews, E.....	1897
Adams, O. F.....	1910	Andrews, F. C. (deceased)....	1914
Adlard, L. S.....	1915	Angus, H. H.....	1903
Adsett, F. C.....	1914	Angus, R. W.....	1894
Agnew, N. J.....	1910	Apsey, J. F.....	1888
Aitken, J.	1911	Archer, E. G.....	1911
Akers, H. G. (deceased)....	1908	Ardagh, A. G.....	1893
Alexander, J. H.....	1904	Ardagh, E. G. R.....	1900
Alison, T. H.....	1892	Arens, A. H.....	1906
Alison, J. G. R.....	1903	Arens, H. W. (deceased).	1905
Allan, E. B.....	1916	Arens, R. J.....	1908
Allan, J. R.....	1892	Arens, E. G.....	1909
Allan, J. L.....	1900	Arksey, G. A.....	1915
Allan, L. F.....	1908	Armer, C. E.....	1914
Allan, L. B.....	1911	Armer, J. C.....	1906
Allen, F. G.....	1907	Armour, R. H.....	1905
Allen, R. J.....	1913	Armstrong, J.....	1895
Allison, C. B.....	1908	Armstrong, H. V.....	1906
Alport, F.....	1906	Arthur, R. M.....	1915
Alton, J. L.....	1914	Ashbridge, W. T.....	1888
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Amsden, W. G.....	1910	Austin, E. T.....	1909
Anderson, A. C.....	1915	Austin, F. D.....	1915
Anderson, A. G.....	1892	Avery, C. R.....	1913
Anderson, F. J.....	1907	Aylesworth, C. B.....	1905

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Babcock, H. A.....	1917	Barber, T.....	1899
Badgley, L. A.....	1911	Barber, W.....	1905
Bain, J. A.....	1900	Barker, H. F.....	1894
Bain, J. W.....	1896	Barley, J. H.....	1900
Baird, J. A.....	1910	Barnes, L. F.....	1916
Baird, W. J.....	1910	Barnett, H. A.....	1910
Baker, M. H.....	1906	Barrett, R. H. (deceased).	1901
Baldwin, F. W.....	1906	Barrett, J. H.	1904
Baldwin, L. C. M.....	1913	Barry, W. H.....	1909
Ball, E. F.....	1888	Bartlett, E.....	1908
Ball, F. W.....	1916	Bartley, T. H.....	1911
Ball, W. V.....	1915	Bates, M. (deceased).	1906
Ballantyne, H. F.....	1893	Batten, H. L.....	1911
Banbury, T. R.....	1915	Beacock, V. A.....	1915
Banigan, J.....	1917	Beatty, F. W.....	1913
Banks, H. R.....	1914	Beatty, W. B.	1913
Banting, E. W.....	1906	Beatty, H. J.....	1891
Barber, F.....	1906	Beatty, W. G.....	1901
Barber, H. C.....	1908	Beatty, J. A.....	1903
Barber, H. G.....	1902	Beauregard, A. T.....	1894

Beckstedt, R.D.S.....	1909	Bowman, A. M.....	1886
Bedard, E. L.....	1914	Bowman, E. P.....	1910
Bedard, H. J.....	1914	Bowman, F.....	1911
Bedford, F. J. (deceased).....	1908	Bowman, F. M.....	1890
Begg, W. A.....	1905	Bowman, H. D.....	1907
Beith, R. E.....	1909	Bowman, H. J.....	1885
Belcher, J. T.....	1914	Boyd, D.....	1916
Bell, C. A.....	1913	Boyd, D. G.....	1894
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Bellisle, J. P. (deceased).....	1906	Brace, J. H.....	1908
Bemrose, B. W.....	1916	Brackinreid, T. W.....	1911
Bennett, G. A.....	1909	Brady, W. S.....	1907
Bennett, P.....	1915	Brandon, E. T. J.....	1901
Bennett, S. G.....	1914	Brandon, H. E.....	1906
Bergey, A. E.....	1894	Bray, L. T.....	1900
Berkeley, G. L.....	1911	Brebner, G. (deceased).....	1895
Berry, A. E.....	1917	Brecken, P. R.....	1908
Berry, E. W.....	1910	Breithaupt, J. E.....	1915
Bertram, G. M.....	1910	Brereton, L. R.....	1913
Betts, H. H.....	1906	Brereton, W. P.....	1901
Beynon, D. E.....	1906	Breslove, J.....	1903
Billings, J. H.....	1911	Breuls, H. E.....	1916
Bingham, H. C.....	1910	Brian, M. E.....	1906
Binns, P. V.....	1914	Bristol, W. M.....	1905
Birchard, E. R.....	1909	Broadfoot, F. C.....	1906
Birrell, W. G.....	1916	Brock, A. F.....	1910
Bissett, D. G.....	1910	Brock, W. M.....	1911
Bissett, G. W.....	1906	Brodie, W. M.....	1895
Bissett, J. R.....	1911	Broughton, G. H.....	1907
Black, B. S.....	1913	Broughton, J. T.....	1902
Black, G. E.....	1908	Brouse, E. D. G.....	1915
Black, H. M.....	1915	Brouse, W. H. D.....	1911
Black, W. D.....	1909	Brown, C. E.....	1909
Blackwell, R. H. H.....	1910	Brown, D. B.....	1888
Blackwood, A. E.....	1895	Brown, E. I.....	1908
Blackwood, W. C.....	1906	Brown, G. L.....	1893
Blain, D.....	1913	Brown, H.....	1911
Blair, W. J.....	1902	Brown, H. H.....	1914
Bleakley, J. F.....	1885	Brown, H. S.....	1917
Blizard, D. C.....	1909	Brown, J. A.....	1907
Blyth, J. M.....	1914	Brown, J. M.....	1902
Boeckh, J. C.....	1906	Brown, L. L.....	1895
Bonham, A. R.....	1914	Brown, L. R.....	1915
Bonnell, M. B.....	1904	Brown, N. B.....	1916
Bonter, E. R.....	1913	Brown, T. D.....	1904
Bonus, W. H.....	1915	Brown, T. W.....	1906
Boswell, E. J.....	1895	Brown, W. D.....	1914
Boswell, M. C.....	1900	Browne, E. W.....	1909
Boswell, W. O.....	1911	Browne, M. O.....	1910
Bothwell, R. S. C.....	1917	Bruce, W. J.....	1907
Boulton, W. J.....	1909	Bryce, W. F. M.....	1908
Boustead, W. E. (deceased).....	1890	Buchan, P. H.....	1908
Bow, J. A.....	1897	Buchanan, F. M.....	1915
Bowen, G. H.....	1909	Buchanan, J. A.....	1909
Bower, J. H. W.....	1914	Buchanan, T. R.....	1913
Bowers, W. J. (deceased).....	1901	Buchanan, W. B.....	1913
Bowes, H. F.....	1908	Bucke, M. A. (deceased).....	1890

Bucke, W. A.....	1894	Burns, J. C. (deceased).....	1887
Budd, H. C.....	1915	Burns, J. E.....	1909
Bumstead, S. W.....	1917	Burnham, F. W.....	1904
Bunnell, A. E. K.....	1906	Burnham, N. G. H. (deceased).....	1910
Burd, J. H.....	1903	Burnside, J. T. M. (deceased).....	1899
Burden, H. J.....	1915	Burrows, B. H. A. (deceased).....	1913
Burgess, E. L.....	1903	Burwash, L. T.....	1896
Burgess, J. R.....	1910	Burwash, N. A.....	1903
Burley, R. J.....	1904	Bush, C. E.....	1907
Burns, D. (deceased).....	1883	Byam, F. M.....	1906

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Cain, E. T.....	1911	Chace, W. G.....	1901
Calder, J. W.....	1904	Chadwick, R. E. C.	1906
Caldwell, W. B.....	1913	Chadwick, W. W.....	1911
Cale, W. C.....	1910	Challen, G.	1908
Cameron, N. C.....	1904	Challies, J. B.....	1904
Cameron, A.....	1906	Chalmers, W. J.....	1889
Cameron, M. G.....	1909	Chalmers, J.....	1894
Cameron, C. S.....	1911	Chambers, E. V.....	1914
Cameron, O. L.....	1913	Chandler, R. B.....	1911
Campbell, A. D.....	1910	Chapman, J. R. (deceased)...	1916
Campbell, A. J.....	1904	Charlesworth, L. C.....	1893
Campbell, A. M.....	1904	Charlton, H. W.....	1897
Campbell, D. H.....	1914	Chase, A. V.....	1905
Campbell, H. M.....	1914	Cherry, P. G.....	1911
Campbell, J. J. (deceased)...	1914	Chesnut, A. W. (deceased)...	1910
Campbell, W. G.....	1902	Chesnut, E. F.....	1911
Campbell, A. R. (deceased)...	1902	Chesnut, F. H.....	1908
Campbell, R. J.....	1895	Chesnut, V. S.....	1909
Campbell, G. M.....	1896	Chewett, H. J.....	1888
Campbell, L. L.....	1913	Chilver, C. A.....	1904
Campbell, W. C.....	1905	Chilver, H. L.....	1904
Campbell, N. A.....	1908	Chisholm, D. C.....	1910
Campbell, R. A.....	1909	Christie, F. C.....	1917
Campbell, A. W.....	1906	Christie, W.....	1902
Campbell, J. E.....	1908	Christie, U. W.....	1904
Campbell, C. D.....	1911	Christie, A. G.....	1901
Candee, C. N.....	1914	Christie, R. M.....	1914
Canniff, C. M.....	1888	Chubbuck, L. B.....	1899
Carey, B.....	1889	Clark, H.....	1913
Carlyle, R. T.....	1914	Clark, J.....	1900
Carlyle, W. M. (deceased)...	1910	Clark, G. T.....	1906
Carmichael, C. G. (deceased)..	1902	Clark, F. W.....	1911
Carmichael, F. N. D.....	1915	Clark, H. J.....	1911
Carmichael, R. M.....	1913	Clarke, F. F.....	1903
Carpenter, H. S.....	1897	Clarkson, G. E.....	1913
Carrie, G. M.....	1913	Claveau, J. A.	1910
Carroll, A. M.....	1908	Cleary, F. S. (deceased).....	1911
Carroll, M. J.....	1906	Clegg, B. D.....	1913
Carscallen, H. R.....	1908	Clement, W. A.....	1889
Carson, W. R.....	1905	Clement, S. R. A.....	1905
Carter, J. M.....	1914	Cline, C. G.....	1909
Carter, W. E. H.....	1898	Clipsham, K. M.....	1914
Caster, J. H.....	1907	Clothier, G. A.....	1899
Catto, R. W.....	1915	Coates, P. C.....	1904
Caudwell, N. S.....	1910	Cockburn, J. R.....	1901
Cavell, E.....	1907	Cockburn, L. S.....	1910

Cockburn, R. M.....	1915	Coulson, C. L.....	1903
Code, A. G.....	1910	Courtice, E. D. W.....	1914
Code, S. B.....	1904	Cousins, E. L.....	1906
Code, T. F. (deceased).....	1904	Coulthard, R. M.....	1899
Cole, D. B.....	1911	Cowan, W. A.....	1904
Cole, W. E. (deceased).....	1908	Cowper, G. C.....	1907
Cole, C. R.....	1910	Coyne, H.....	1908
Coleman, J. H.....	1913	Craig, J. A.....	1899
Colhoun, G. A.....	1906	Craig, J. H.....	1910
Colleran, J. C.....	1917	Craig, S. E.....	1904
Collett, W. C.....	1908	Crashley, J. W.....	1914
Collinson, J. G.....	1909	Crawford, A. W.....	1914
Colquhoun, G. A.....	1910	Crealock, A. B.....	1915
Coltham, G. W.....	1909	Creighton, A. G.....	1906
Conlon, F. T. (deceased).....	1902	Crerar, S. R.....	1904
Connell, C. B. B.....	1907	Crosby, N. L. R.....	1905
Connor, H. V.....	1902	Crosby, T. H.....	1909
Connor, A. W.....	1895	Crouch, M. E.....	1911
Cooch, H. A.....	1909	Cruthers, W. M.....	1911
Cook, A. S.....	1911	Culbert, M. T. (deceased).....	1902
Cook, G. M.....	1913	Culbert, J. V.....	1907
Cook, J. D.....	1915	Cumming, J. D.....	1908
Cook, W. A. Mc.....	1906	Cumming, R.....	1916
Coombs, J. A.....	1913	Cumming, K.....	1902
Coon, B. R.....	1913	Cummins, O. F.....	1911
Cooper, C.....	1899	Cunerty, T. J.....	1911
Corbould, C. E. B.....	1914	Cunningham, C. H.....	1911
Corman, E. H.....	1917	Cunningham, J. N. (deceased).....	1916
Corman, W. E.....	1909	Cunningham, R. H.....	1909
Cornell, C. W.....	1911	Currie, W. M.....	1904
Corrigan, G. D. (deceased).....	1890	Curtis, W. T.....	1913
Corrigan, T. E.....	1905	Curzon, J. H.....	1911
Cory, R. Y.....	1908	Cuthbertson, W.....	1914

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Da Costa, W. R.....	1915	Davis, H. W.....	1909
Dahl, A. D.....	1908	Davis, H. C.....	1909
Dale, R. S.....	1916	Davis, W. B.....	1911
Dallyn, F. A.....	1909	Davison, J. E.....	1900
D'Alton, F. K.....	1911	Davison, A. E.....	1903
Dalton, G. F.....	1914	Dawson, I. H.....	1909
Dandeno, L. G.....	1916	Deacon, T. R.....	1891
Daniel, N. H.....	1915	Dean, C. D.....	1910
Daniels, W. N.....	1906	Dean, W. A.....	1915
Danks, F. A.....	1908	Death, N. P. F.....	1909
Danks, C. N.....	1909	DeCew, J. A.....	1896
Dann, E. M. (deceased).....	1909	De Guerre, F. C.....	1911
Darling, E. H.....	1898	Deitch, E. L.....	1913
Darroch, J.....	1908	Delahaye, W. H.....	1909
Dashwood, R.....	1914	Delamere, R. D.....	1914
Dates, A. J.....	1913	De Laporte, A. V.....	1910
Davey, C. G.....	1915	Delisle, J. L.....	1916
Davidson, R. D.....	1914	Depew, H. H.....	1904
Davidson, G. P. (deceased).....	1915	Derham, W. P.....	1909
Davidson, J. J.....	1915	Deverall, E. V.....	1915
Davis, R.....	1907	Diamond, R. W.....	1913
Davis, A. I.....	1909	Dibblee, J.....	1915

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Dickson, J. V.....	1917	Downing, F. H.....	1911
Dickson, W. L.....	1915	Duff, A. R.....	1909
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Dixon, H. A.....	1900	Duff, W. A.....	1901
Dobbin, R. L.....	1910	Duggan, G. H.....	1883
Dobbin, W. L.....	1916	Dunbar, W. B.....	1911
Dobie, J. S.....	1895	Duncan, J. M.....	1910
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Doncaster, L. W.....	1911	Dunlop, R. J.....	1902
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Eastwood, J. H.....	1916	Elwell, W. (deceased).....	1902
Eckert, C. H.....	1911	Emery, V. H.....	1910
Edwards, W. M.....	1902	Emmerson, E. R.....	1915
Edwards, C.....	1908	Empey, J. M.....	1902
Edwards, G. R.....	1915	English, A. B. (deceased).....	1890
Edwards, H. C.....	1914	Evans, A. C.....	1915
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Elliot, J. A.....	1911	Evans, S. L.....	1908
Elliot, R. V.....	1915	Evans, W. J.....	1910
Elliott, J. A.....	1914	Ewart, J. A.....	1894
Elliott, G. R.....	1911	Ewart, F. R.....	1907
Elliott, C. F.....	1911	Ewing, E. O.....	1908
Elliott, H. F.....	1914	Eyres, H. E.....	1914
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Fairchild, C.....	1892	Fleming, G. O.....	1914
Fairlie, H. W.....	1910	Fleming, G. R. S. (deceased)...	1907
Falconer, F. S.....	1909	Fleming, J. S. (deceased).....	1914
Falconer, H. S.....	1915	Fletcher, A. W.....	1910
Falls, O. M.....	1914	Fletcher, F. T.....	1910
Fargey, T. A.....	1909	Fletcher, J. A.....	1910
Farrell, K. A.....	1911	Flint, C.....	1908
Farrelly, T. J.....	1911	Flint, T. R. C.....	1910
Fear, S. L.....	1906	Flook, S. E.....	1911
Fensom, C. J.....	1903	Flynn, C. C.....	1911
Ferguson, C. R.....	1910	Follett, R. C.....	1910
Ferguson, D. G.....	1914	Foote, F. F.....	1913
Ferguson, G. H.....	1905	Forbes, D. L. H.....	1902
Ferguson, J. B.....	1909	Ford, A. L.....	1904
Ferguson, J. W.....	1910	Ford, J. W. H.....	1915
Fergusson, A. T.....	1909	Foreman, J. L.....	1914
Fierheller, H. S. (deceased)...	1905	Foreman, J. M.....	1910
Fingland, W.....	1893	Forman, W. E.....	1899
Fiddes, F. R.....	1913	Forrester, C.....	1893
Fisken, J. B. K.....	1910	Forward, E. A.....	1897
Flanagan, O. L.....	1908	Forward, C. C.....	1906
Flannery, D. T.....	1915	Foster, A. H.....	1908
Fleck, J. G.....	1904	Foster, W. J.....	1910
Flegg, R. L.....	1916	Foulds, W. C.....	1910

Francis, Walter J.....	1893	French, W. G.....	1915
Francis, G. C.....	1908	Frid, H. P.....	1911-1915
Frankel, E. L.....	1911	Frost, E. R.....	1909
Franklin, H. J.....	1914	Frost, J. G. G.....	1914
Fraser, A.....	1910	Fuce, E. O.....	1903
Fraser, J. A.....	1917	Fuller, C. H. R.....	1914
Fraser, W. R.....	1915	Fuller, R. J.....	1911
Fredin, J.....	1910	Fullerton, C. H.....	1900
Freeland, E. E.....	1911	Fulton, W. J.....	1915
Freeman, T. E.....	1909	Fux, P. C.....	1907
Freeman, J. R.....	1911		

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Gaby, F. A.....	1903	Gourlay, W. A.....	1903
Gagne, S. (deceased).....	1901	Graham, C. W.....	1906
Galbraith, J. S.....	1913	Graham, E. B.....	1910
Galbraith, R. D.....	1915	Graham, G. W.....	1907
Gall, H.....	1910	Graham, D. A.....	1909
Galletly, J. S.....	1907	Graham, T. S.....	1915
Galt, G. (deceased).....	1907	Gram, J. I.....	1917
Gardner, D. B.....	1916	Grange, E. R.....	1915
Gardner, J. C.....	1903	Grant, W. F.....	1898
Garland, M. L.....	1890	Grant, R. R.....	1909
Garrow, A. B.....	1907	Grasett, C. S.....	1907
Geale, C. N.....	1915	Grassie, C. A.....	1908
Gear, S. S.....	1908	Gray, A.....	1904
George, R. E.....	1903	Gray, A. G.....	1913
Gibbons, J.....	1888	Gray, A. T.....	1897
Gibson, A. E.....	1902	Gray, A. J.....	1913
Gibson, J. M.....	1910	Gray, E. D.....	1915
Gibson, M. M.....	1910	Gray, E. R.....	1913
Gibson, N. R.....	1901	Gray, G. D.....	1915
Gibson, W. S.....	1904	Gray, J.....	1906
Gill, E. I.....	1914	Gray, J.....	1915
Gill, J. R.....	1914	Gray, J. E.....	1909
Gillespie, P.....	1903	Gray, W. W.....	1904
Gillies, A.....	1907	Greatrex, W. K.....	1917
Glass, L. G.....	1915	Green, R. E.....	1911
Glover, A. E.....	1909	Greene, E. A.....	1911
Goad, V. A. E.....	1910	Greene, G. E. D.....	1909
Goldie, A. R.....	1893	Greene, P. W.....	1906
Goodall, J. N.....	1904	Greene, R. L.....	1910
Gooderham, A. E.....	1909	Greene, W. H.....	1909
Gooderham, G. A.....	1915	Greenwood, W. K.....	1904
Gooderham, J. L.....	1911	Grierson, C. I.....	1914
Goodeve, V. S.....	1910	Griffiths, G. E.....	1915
Goodman, H. M.....	1913	Guernsey, F. W.....	1895
Goodwin, A. C.....	1902	Gulley, C. L.....	1908
Goodwin, J. B.....	1892	Gunn, W. W.....	1909
Gordon, J. P.....	1904	Gurnett, E. G.....	1916
Gordon, W. A.....	1910	Gurney, W. C.....	1896
Gouinlock, R. W.....	1914	Gurofsky, M.....	1916
Gould, W. H. R.....	1915	Guest, W. S.....	1900
Gourlay, V. F.....	1910	Guy, E.....	1899

H

Haas, M. S.....	1915	Hagedorn, G. C.....	1916
Hackner, J. W.....	1908	Haight, H. V.....	1896
Hadcock, J. P.....	1913	Halford, D. S.....	1915
Hagarty, R. E. W.....	1907	Hall, H. G.....	1911

Hall, K.....	1907	Henry, J. A.....	1900
Hall, W. H.....	1914	Henry, R. A.....	1913
Hall, W. T. (deceased).....	1915	Henwood, C.....	1902
Hally, G. H.....	1914	Herald, W. J.....	1894
Hamer, A. T. E.....	1901	Hermon, E. B.....	1886
Hamilton, J. F.....	1903	Heron, J. B.....	1904
Hamilton, C. B.....	1906	Hertzberg, C. S. L.....	1905
Hamilton, C. T.....	1907	Hertzberg, H. F. H.....	1907
Hamilton, G. M.....	1911	Hett, S.....	1906
Hanes, G. S.....	1903	Hewson, E. G.....	1908
Hanley, S. C.....	1893	Hewson, W. G.....	1905
Hanlon, J. E.....	1915	Hickling, F. G.....	1910
Hanmer, G.....	1917	Hicks, W. A. B.....	1897
Hanna, J. J.....	1914	Higgins, L. T.....	1915
Hanning, G. F.....	1889	Hill, E. M. M.....	1904
Hara, L. D.....	1904	Hill, S. N.....	1904
Harcourt, F. Y.....	1903	Hill, H. O.....	1907
Hare, R. A.....	1907	Hill, H. R.....	1911
Hare, R. M.....	1916	Hill, T. A.....	1913
Hare, W. A.....	1899	Hillis, C. R. (deceased).....	1906
Harkness, A. H.....	1895	Hinch, E. F.....	1910
Harkness, A. L.....	1906	Hogarth, B. B.....	1914
Harper, C. J.....	1909	Hogarth, C. E.....	1915
Harris, A. B.....	1917	Hogarth, G.....	1909
Harris, C. J.....	1904	Hogg, T. H.....	1907
Harris, J. H.....	1910	Hoidge, R. T. C.....	1916
Harris, H. C.....	1913	Holcroft, H. S. (deceased).....	1900
Harris, R. W.....	1917	Holden, A. J.....	1917
Harrison, R. L.....	1906	Holden, O.....	1913
Harrison, F. W.....	1905	Holmes, A. E.....	1909
Harrison, E.....	1906	Holmes, C. R.....	1909
Harron, L. W.....	1916	Hookway, C. W.....	1906
Hartney, J. C. (deceased).....	1906	Hoover, O. H.....	1910
Harvey, C.....	1901	Hopkins, P. E.....	1910
Harvey, D. W.....	1909	Hopkins, R. H.....	1906
Harvie, N. J. (deceased).....	1910	Horton, J. A.....	1903
Hastings, C. E.....	1916	Hoshal, G. C.....	1909
Hastings, M. B.....	1911	Houston, R. S.....	1906
Haultain, H. E. T.....	1889	Howard, J. T.....	1913
Haviland, F. L.....	1908	Howlett, T. F.....	1913
Hawes, J. H.....	1914	Hubbert, S.....	1916
Hawley, H. A.....	1913	Huber, W.....	1906
Hay, C. O. (deceased).....	1909	Huether, D. J.....	1908
Hayes, L. J.....	1903	Huether, A. D.....	1908
Hayman, L. T.....	1914	Huff, A. J.....	1911
Hayward, C.....	1915	Huffman, K.....	1911
Hearn, R. L.....	1913	Hughes, C. (deceased).....	1909
Heebner, M. B.....	1911	Hugli, E. E. H.....	1914
Heinonen, H. J.....	1913	Hull, H. S.....	1895
Helliwell, J. G. (deceased).....	1910	Hull, A. H.....	1906
Helson, F. I.....	1901	Hunter, A. E. (deceased).....	1909
Hemphill, W.....	1900	Hunter, A. N.....	1908
Hemphill, J.....	1909	Hurlburt, R. W.....	1917
Henderson, E. E.....	1885	Hustwitt, S. A.....	1914
Henderson, F. D.....	1903	Hutcheon, J.....	1890
Henderson, J. F.....	1910	Hutcheson, G. F.....	1917
Henderson, S. E. M.....	1900	Hutchings, W.....	1914
Henderson, C. D.....	1908	Hutton, C. H.....	1907
Hendry, M. C.....	1905	Hyatt, H.....	1911

I

Hyland, H. M.....	1907	Ireson, E. T.....	1913
Hyman, E. W.....	1907	Ironside, G. A.....	1915
Iler, S. B.....	1908	Irvine, J. (deceased).....	1889
Ingles, C. J.....	1904	Irwin, H.....	1909
Innes, W. L.....	1890	Irwin, W. J.....	1910
Ireland, L. G.....	1907	Isbister, J.....	1909
Ireland, T. P.....	1915		

J

Jackes, F. P.....	1909	Johnson, G. R.....	1913
Jackson, C. W. H.....	1915	Johnston, G. W. F.....	1915
Jackson, J. G.....	1903	Johnston, H.....	1903
Jackson, F. C.....	1901	Johnston, H. C.....	1910
Jackson, W.....	1907	Johnston, A. C.....	1894
Jackson, C. B.....	1907	Johnston, D. M.....	1902
Jackson, J. E.....	1909	Johnston, H. A.....	1900
Jackson, K. B.....	1916	Johnston, J. C.....	1900
James, E. W.....	1909	Johnston, J. A.....	1900
James, D. D.....	1889	Johnston, C. K.....	1903
James, E. A.....	1904	Johnston, R. H.....	1910
James, F. L.....	1910	Johnston, W. J.....	1909
James, O. S.....	1891	Johnston, C.....	1906
Jamieson, E. A.....	1910	Johnston, C. E. (deceased)...	1909
Jannati, A. S.....	1914	Johnston, J. T.....	1908
Jarvis, R. H. (deceased)	1911	Jones, C. M.....	1915
Jefferson, K. A.....	1915	Jones, J. E.....	1894
Jeffrey, D.....	1882	Jones, L. E.....	1911
Jepson, W. C.....	1906	Jones, G. S.....	1905
Jermyn, P. V.....	1904	Jones, G. R.....	1906
Job, H. E.....	1894	Jones, T. (deceased).....	1906
Johnson, C. C.....	1890	Jupp, A. E.....	1906
Johnson, R. P.....	1914	Jupp, E. H.....	1915
Johnson, S. M.....	1894	Junkin, R. L.....	1913

K

Kamman, J. I.....	1914	Killip, W. C.....	1908
Karn, H. C.....	1916	Kilmer, C. E.....	1913
Kay, J.....	1914	King, C. F.....	1897
Kay, E. W.....	1907	King, G. F.....	1916
Keefe, W. S. H.....	1904	King, J. T.....	1910
Keefer, N. G.....	1914	Kinghorn, A. A.....	1907
Keele, J.....	1893	Kingstone, G. A.....	1910
Keffer, A. H. E.....	1909	Kirby, J. R.....	1916
Keith, J. C.....	1910	Kirby, R. W.....	1916
Keith, D. F.....	1907	Kirkland, W. C. (deceased)...	1884
Keith, H. P.....	1907	Kirkwood, M.....	1911
Kelly, E. A.....	1911	Kirn, R. W.....	1916
Kelly, S. S.....	1913	Kirwan, G. L.....	1910
Kemp, J. B. O.....	1909	Kirwan, P. T.....	1910
Kennedy, J. H.....	1882	Klingner, L. W.....	1907
Kennedy, H. G.....	1908	Klotz, H. N. (deceased).....	1909
Keppy, J. D.....	1906	Knight, R. H.....	1902
Kerby, H. S.....	1914	Knight, J. A.....	1914
Kerr, A. E.....	1913	Knight, S.....	1910
Kerr, J. A.....	1914	Kohl, H.....	1915
Kewin, G. E.....	1914	Kormann, J. S.....	1898
Key, W. R.....	1909	Kribs, G.....	1905
Keys, C. R.....	1915	Krug, S. J.....	1916
Keys, W. R.....	1908		

L

Laidlaw, J. T.....	1893	Lee, L. A. C.....	1916
Laidlaw, R. A.....	1901	Lee, R. G.....	1910
Laidlaw, R. E.....	1915	Lee, W. A. (deceased).....	1892
Laing, W. F. (deceased).....	1896	Leighton, J. W.....	1905
Laing, A. T.....	1892	Leitch, J. N. (deceased).....	1910
Laing, J. S.....	1913	Lennox, A. E.....	1909
Laing, P. A.....	1905	LePan, A. D.....	1907
Laird, R.....	1886	Leslie, A.....	1913
Lamb, F. C.....	1907	Leslie, J. N. M.....	1908
Lamb, G. J.....	1915	Lethbridge, W. R.....	1911
Lamont, A. W.....	1909	Levesque, L.....	1917
Lane, A. (deceased).....	1891	Lewis, F. C.....	1908
Lang, A. G.....	1903	Lieberman, M.....	1911
Lang, J. L.....	1906	Lillie, G. L.....	1911
Lang, S. A.....	1914	Lindsay, J. H.....	1907
Langley, C. E.....	1892	Lindsay, R. E.....	1914
Langmuir, F. L.....	1902	Linton, A. P.....	1906
Langmuir, C. B.....	1909	Livingston, H. D.....	1913
Lanning, J.....	1911	Lloyd, N. C. A.....	1909
Larkworthy, W. J. (deceased).....	1904	Lloyd, R. H.....	1915
Laschinger, E. J.....	1892	Lockhart, W. E. (deceased)...	1915
Lash, F. L.....	1893	Long, A. L.....	1911
Lash, N. M.....	1894	Longstaff, J. C.....	1910
Latham, R.....	1899	Longworthy, W. E.....	1915
Latimer, C. W.....	1914	Lorimer, N. H.....	1914
Latornell, A. J. (deceased)....	1903	Lott, A. E.....	1887
Latornell, A.....	1905	Loucks, R. W. E.....	1909
Lavrock, J. E.....	1898	Loudon, T. R.....	1905
Lawler, E. R.....	1910	Lount, C. T.....	1915
Lawless, N. (deceased).....	1911	Lowrie, A. W. P.....	1911
Lawrence, G. W.....	1915	Ludgate, B. A.....	1885
Lawson, W. L.....	1892	Lumbers, W. C.....	1901
Lawrie, R. R. (deceased)	1896	Lye, O. G.....	1914
Leach, H. O.....	1915	Lye, R. G.....	1915
Leaver, C. B.....	1910	Lynar, H. R.....	1908

Mac

Macallum, A. F.....	1893	MacKay, J. T.....	1902
MacAndrews, W. M.....	1911	MacKay, E. G.....	1910
Macaulay, R. V.....	1911	MacKendrick, B.....	1914
MacBain, J. T.....	1911	MacKenzie, H. R.....	1913
MacBeth, C. (deceased).....	1896	MacKenzie, K. A.....	1906
MacBeth, R. E. A.....	1911	MacKenzie, H. J.....	1914
Macdonald, A. D.....	1910	Mackenzie, A. M.....	1914
Macdonald, C. A.....	1915	MacKenzie, W. S.....	1911
Macdonald, G. G.....	1917	Mackinnon, J. A.....	1911
Macdonald, J. B.....	1910	Mackinnon, J. G.....	1909
Macdonald, J. A.....	1910	Mackinnon, W.....	1906
Macdonald, G. A.....	1910	Mackintosh, D.....	1898
Macdonald, F. M.....	1911	MacLachlan, K. S.....	1913
Macdonald, R. A.....	1916	MacLachlan, W.....	1906
Macdonald, W. A.....	1914	MacLachlan, W. A.....	1909
Macdonell, I. M.....	1915	MacLaurin, J. G.....	1911
Macdougall, A. C.....	1901	Maclea, B. A.....	1909
Macfarlane, E. D.....	1909	MacLennan, G. G. (deceased).....	1910
MacGregor, A. E.....	1910	MacLeod, G.....	1907
MacKay, A. G.....	1907	MacLeod, D. D. (deceased)...	1910

MacMillan, G.....	1901	MacPherson, A. R.....	1913
MacMurchy, J. A.....	1896	Macpherson, H. N.....	1914
MacMurchy, H. G.....	1910	MacQuarrie, A. H.....	1914
Macpherson, H. E.....	1915	MacTavish, H. J.....	1910
Macpherson, N. W.....	1909	MacTavish, W. H.....	1913

Mc

McAllister, J. E.....	1891	McGregor, W. W. (deceased)..	1905
McAllister, A. L.....	1893	McGregor, J. M.....	1908
McAlpine, D. D.....	1909	McGugan, D. F.....	1915
McAndrew, J. B.....	1911	McGugan, D. J.....	1907
McAree, J. (deceased).....	1882	McIlhargey, P. E.....	1917
McArthur, R. E.....	1900	McIlwraith, D. G.....	1906
McArthur, A. S.....	1909	McIntosh, A. H.....	1907
McAuslan, H. J.....	1903	McIntosh, W. G.....	1909
McBride, A. H.....	1902	McIntyre, J. S.....	1915
McBride, T. C.....	1910	McKague, E. V.....	1915
McCaffrey, W. R.....	1915	McKay, O.....	1885
McCandlish, S. G.....	1917	McKay, C. (deceased).....	1904
McCarthy, T. V.....	1913	McKay, W. N.....	1895
McClelland, H. L.....	1917	McKechnie, F. H.....	1909
McCollum, C. R.....	1909	McKenzie, D. A.....	1911
McConnell, A. W.....	1906	McKenzie, D. W.....	1905
McConnell, R. S.....	1913	McKenzie, J. A.....	1906
McCordick, A. S.....	1909	McKim, L. R.....	1910
McCort, C. R.....	1915	McKinnon, H. L.....	1895
McCrodan, B. A.....	1916	McKnight, J. H.....	1909
McCuaig, O. B.....	1904	McLaren, A. J.....	1911
McCuaig, P. J.....	1909	McLaren, D. L.....	1914
McCulloch, A. L.....	1887	McLean, C. A.....	1905
McCurdy, J. A. D.....	1907	McLean, W. N.....	1905
McDonald, K. D.....	1915	McLean, L. A. (deceased)...	1908
McDonald, J. P.....	1915	McLeish, A. G.....	1911
McDonald, R. C.....	1914	McLellan, R. A.....	1911
McDougall, J. (deceased).....	1884	McLennan, A. L.....	1902
McDougall, S. G.....	1910	McLeod, G.....	1909
McDowall, R.....	1888	McMaster, A. T. C.....	1901
McEachren, J. A.....	1911	McMaster, W. A. A.....	1908
McElhanney, T. A.....	1910	McMillan, J. G.....	1900
McElroy, R. W.....	1911	McMillan, D.....	1904
McEntee, B.....	1892	McMillan, V.....	1909
McEwen, G. G.....	1904	McMordie, H. C.....	1908
McEwen, H. J.....	1911	McNab, J. V.....	1906
McFarlane, J. A.....	1903	McNaughton, A. L.....	1903
McFarlane, W. G.....	1904	McNaughton, F. W.....	1898
McFarlane, J. B.....	1907	McNeill, F. W.....	1907
McFarlen, G. W.....	1888	McNiven, J.....	1910
McFarlen, T. J.....	1893	McPherson, A. J.....	1893
McFaul, W. L.....	1913	McPherson, J. A.....	1906
McGarry, P. J.....	1910	McPherson, W. B.....	1911
McGeorge, W. G.....	1908	McQuarrie, M. K.....	1907
McGhie, W. G.....	1911	McQueen, A. A.....	1911
McGibbon, C. P.....	1904	McRoberts, A. A.....	1908
McGie, W. R.....	1915	McSloy, J. I.....	1910
McGill, S. B.....	1914	McTaggart, A. L.....	1894
McGorman, S. E.....	1906	McVean, H. G.....	1901
McGowan, J.....	1895		

M

Mace, F. G.	1905	Mill, F. X. (deceased).....	1889
Madden, J. F. S.	1902	Millar, W. G.	1914
Madge, N. G.	1908	Miller, D. J.	1910
Madill, H. H.	1911	Miller, A. S.	1914
Main, W. T.	1893	Miller, L. Haun.	1900
Maisonville, A. W. R.	1910	Miller, M. L.	1903
Malcolm, A. L.	1909	Miller, L. R.	1906
Malcolmson, W. S.	1907	Milligan, G. L.	1908
Malone, J. E.	1908	Milligan, F. S.	1910
Manning, N. H.	1909	Milligan, W. E.	1914
Manning, R. C.	1917	Millman, N. C.	1913
Manson, G. J.	1904	Mills, F. L.	1915
Manson, A. B.	1909	Mills, G. G.	1907
Marani, C. J.	1888	Mills, P. E.	1910
Marani, V. G.	1893	Mills, P. H.	1914
Margison, O.	1916	Mills, L. G.	1911
Marlatt, K. D.	1908	Milne, C. G. (deceased).....	1892
Marr, N.	1910	Mines, W.	1893
Marriott, F. G.	1903	Minns, J. B.	1907
Marrs, C. H.	1902	Minty, W.	1894
Marrs, D. W.	1906	Mitchell, A. B.	1908
Marshall, J. A.	1914	Mitchell, G.	1915
Marshall, J. A. P.	1914	Mitchell, J. S.	1914
Marshall, R. J.	1908	Mitchell, P. H.	1903
Marshall, S. A.	1907	Mitchell, L. C.	1911
Martin, E. T.	1915	Mitchell, C. H.	1892
Martin, F.	1887	Mitchell, B. F.	1906
Martin, J. C.	1911	Mitchell, W. B.	1916
Martin, W. H.	1910	Moberley, H. K.	1889
Martin, T.	1896	Moffatt, R. W.	1905
Martindale, E. S.	1909	Mogan, J. T.	1915
Martyn, O. W.	1909	Molesworth, G. N.	1907
Mason, D. H. C.	1907	Molesworth, J. C. P. (de-	
Mathers, A. S.	1917	ceased).....	1908
Matheson, W. C.	1901	Monds, W.	1899
Mathison, P.	1901	Monk, E. D.	1908
Matthews, R. G.	1914	Montague, J. R.	1914
Matthews, A. C.	1910	Montague, F. F.	1906
Maus, C. A.	1903	Monteith, E. M.	1915
Maxwell, H. W.	1914	Montgomery, R. H.	1903
Maxwell, W. A.	1906	Moody, F. H.	1908
Maynard, H. V.	1907	Moore, H. H.	1902
Meader, C. H.	1910	Moore, E. E.	1904
Meadows, C. A.	1911	Moore, J. H.	1888
Meadows, W. W.	1895	Moore, J. E. A.	1891
Mechin, F. C.	1914	Moore, F. A.	1903
Meitz, W. H.	1915	Moore, W. J.	1906
Melson, J. W.	1907	Moore, J. M.	1907
Mennie, R. S.	1902	Moorhouse, W. N.	1904
Menzies, J. M.	1906	Morden, L. W.	1905
Merrill, E. B.	1890-1891	Morgan, J. P.	1910
Merriman, H. O.	1910	Morice, J. H.	1908
Middleton, H. T.	1901	Morley, P. F.	1907
Mickle, G. R.	1888	Morphy, J. A.	1911
Mickleborough, K. F.	1913	Morris, A.	1915
Mickler, G. J.	1913	Morris, B. M. (deceased).....	1915

Morris, J. L.....	1881	Munro, G. R.....	1905
Morris, C. A.....	1909	Munro, F. V.....	1909
Morris, W. D.....	1915	Muntz, E. P.....	1914
Morrison, D.....	1914	Murdie, W. C.....	1913
Morton, G.....	1909	Murdock, C. R.....	1906
Mowbray, F. E. H.....	1908	Murphy, C. J.....	1906
Muir, J. M.....	1915	Murphy, M. H.....	1911
Mullins, E. E.....	1903	Murray, E. W.....	1907
Mullins, G. J.....	1914	Murray, J. D.....	1907
Mulqueen, F. J.....	1913	Murray, W. P.....	1908
Munro, A. H.....	1910	Murton, J. C.....	1911
Munro, W. H.....	1904	Mutch, D. A. S.....	1913

N

Nash, J. C.....	1901	Newton, W. E.....	1910
Nash, T. S.....	1902	Ney, C. H.....	1916
Near, W. P.....	1906	Nichol, F. T.....	1910
Neelands, E. V.....	1900	Nicholson, C. J.....	1894
Neelands, E. W.....	1907	Nicholson, C. L.....	1914
Neelands, R. E. K.....	1907	Nicholson, J. B.....	1914
Neelands, R.....	1906	Nicklin, H. S.....	1915
Neilly, B.....	1907	Nicklin, W. G.....	1905
Neilson, M. A.....	1915	Niebel, E. H.....	1911
Neville, E. A.....	1909	Nixon, C. K.....	1911
Nevitt, I. H.....	1903	Noble, E. S.....	1911
Newcombe, J. C. (deceased)....	916	Noecker, C.....	1914
Newhall, V. A.....	1910	Northey, R. K.....	1911
Newman, W.....	1891	Nott, G. E.....	1916
Newton, J.....	1909	Nourse, A. E.....	1907
Newton, K. L.....	1913		

O

O'Brien, E. D.....	1905	Oke, W. V.....	1911
O'Brien, J. E.....	1917	Oliver, C. E.....	1916
O'Callaghan, E. A.....	1916	Oliver, E. W.....	1903
O'Connor, E. B.....	1915	Oliver, J. P.....	1903
Odell, L. S.....	1909	Omand, W. M.....	1915
O'Donnell, V. J.....	1909	O'Neil, C. M.....	1910
Offerhaus, W. A. R.....	1917	Orr, J. A.....	1911
O'Flynn, W. A.....	1911	O'Sullivan, J. J.....	1907
O'Grady, W. deC.....	1908	Otto, C. J.....	1913
O'Hearn, J. J.....	1909	Owens, J. A.....	1914

P

Pace, J. D.....	1903	Parsons, J. L. R.....	1901
Pace, G.....	1904	Paterson, G. W.....	1906
Pae, A. W.....	1909	Paton, T. K.....	1907
Palmer, C. E.....	1910	Patten, B. B.....	1903, 1905
Pardoe, W. S.....	1904	Patterson, J.....	1899
Paris, J.....	1904	Patterson, R. G.....	1914
Park, D. G.....	1906	Patton, J. McD.....	1911
Parke, J.....	1904	Paul, R. A.....	1915
Parker, A. H.....	1914	Paulin, F. W.....	1907
Parker, G. C.....	1910	Payne, A. N.....	1915
Parker, J. S.....	1911	Peaker, W. J.....	1904
Parkin, J. H.....	1911	Pearce, K. K.....	1910
Parkinson, N. F.....	1913	Pearce, L. P.....	1915
Parr, H. A.....	1917	Pearson, C. L.....	1911

Peart, J. D.....	1914	Plunkett, T. H.....	1903
Peart, J. W.....	1913	Ponton, G. M.....	1909
Peck, H. M.....	1915	Pope, A. S. H.....	1899
Peckover, H. J.....	1908	Porte, E. H.....	1911
Pedder, J. R. (deceased).....	1890	Porte, W. B.....	1906
Pennington, C. W.....	1914	Porter, C. F.....	1915
Pepler, S. J. (deceased).....	1911	Porter, C. J.....	1909
Pequegnat, M.....	1908	Porter, J. E.....	1915
Perrin, W. J. (deceased).....	1911	Potter, R. B.....	1907
Perron, E.....	1913	Powell, G. G.....	1902
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Peterkin, S. M.....	1915	Powell, W. D.....	1915
Petry, A. M.....	1909	Power, G. H.....	1901
Pettingill, R. E.....	1906	Pratt, F. M.....	1911
Phillips, E. H.....	1900	Prentice, J. M. (deceased)....	1892
Phillips, H. G.....	1908	Price, H. W.....	1901
Phillips, C. H.....	1910	Pringle, J. E.....	1916
Phillips, E. P. A.....	1905	Prochnow, F. E.....	1907
Phillips, W. E.....	1914	Proctor, A. I.....	1909
Philp, D. H.....	1903	Proctor, E. M.....	1908
Philp, G. O.....	1914	Procnier, J. F.....	1907
Philp, W. M.....	1909	Proudfoot, H. W. (deceased)...	1897
Pick, B. W.....	1911	Publow, C. F.....	1908
Pickering, A. E.....	1904	Pullan, H.....	1911
Pigott, R. B.....	1909	Pullen, E. F.....	1905
Pinhey, C. H.....	1887	Purdy, W. F. P.....	1915
Pinkney, D. H.....	1903	Purser, R. C.....	1906
Pivnick, M.....	1908	Pye, D. E.....	1910
Playfair, N. L.....	1892		

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Quail, H. C.....	1913	Quance, G. E.....	1907
Quail, J.....	1909	Quinlan, L. J.....	1911

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Railton, L. W.....	1911	Redman, W. B.....	1915
Raine, H.....	1907	Reid, E. V. (deceased).....	1911
Raley, W. E. (deceased).....	1915	Reid, F. B.....	1904
Ramsay, W. S.....	1910	Reid, F. G.....	1915
Ramsey, G. L.....	1905	Relyea, P. J.....	1915
Ramsperger, A. F.....	1909	Revell, G. E. (deceased).....	1899
Rance, C. C.....	1915	Rice, R. H.....	1914
Raney, P. H. (deceased).....	1914	Richards, E.....	1899
Rankin, G.....	1915	Richardson, A. A.....	1915
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Ratz, E. G.....	1913	Richardson, F. L.....	1908
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Robertson, A. S.....	1914	Ross, J. E.....	1888
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Skaith, J. B.....	1914	Stewart, M. A.....	1905
Skinner, J. L.....	1916	Stewart, R. B.....	1909
Skinner, W. C.....	1914	Stewart, R. O.....	1911
Slater, F. W.....	1904	Stewart, W. M.....	1906
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Smart, R. S.....	1904	Stewart, A. W. J.....	1908
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Smiley, R. W.....	1897	Stiles, J. A.....	1907
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Smith, H. M. (deceased).....	1914	Stock, P. H.....	1909
Smith, R. W. (deceased).....	1898	Stocking, F. T.....	1895
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Smith, K. H.....	1911	Stoneman, E. C. R.....	1914
Smith, M. L.....	1911	Storey, G. C.....	1915
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Smith, F. L.....	1910	Street, J. C.....	1909
Smith, F. R.....	1907	Strome, I. R.....	1914
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Sneath, R. G.....	1911	Sturdy, N. H.....	1905
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Somers, N. L.....	1914	Summers, G. F.....	1907
Soper, R. W. (deceased).....	1913	Sureda, J. A.....	1916
Sparling, M. W.....	1909	Sutcliffe, H. W.....	1907
Speirs, R. M.....	1917	Sutherland, A. L.....	1910
Speller, F. N.....	1893	Sutherland, D.....	1913

Sutherland, W. H.....	1902	Sword, A. D.....	1908-1909
Sutherland, C. C.....	1909	Sykes, F. H.....	1905
Swan, A. W.....	1917	Symmes, H. D.....	1891
Swan, W. G.....	1905	Szammers, C. F.....	1911
Swan, R. G.....	1909		

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Tackaberry, S. G.....	1914	Thorold, F. W.....	1900
Tasker, R.....	1913	Tillson, L. B.....	1915
Tate, H. W.....	1909	Tillson, E. D.....	1905
Taylor, A.....	1900	Tilston, C. E.....	1917
Taylor, A. N.....	1915	Tilston, J. A.....	1914
Taylor, J. W. R.....	1908	Tipper, G. A.....	1909
Taylor, J. S. (deceased).....	1914	Titus, C. G.....	1910
Taylor, R.....	1911	Titus, O. W.....	1917
Taylor, T.....	1902	Tom, J. A.....	1915
Taylor, W. E.....	1908	Tomlinson, B. C.....	1917
Taylor, W. V.....	1893	Toms, C. G.....	1908
Teasdale, C. M.....	1902	Topping, V.....	1917
Temes, C. N.....	1914	Torrance, R. D.....	1911
Temple, J. B.....	1911	Torrance, T. E.....	1913
Tennant, D. C.....	1899	Tough, W. G.....	1911
Tennant, W. C. (deceased)....	1900	Townsend, C. J.....	1904
Tennent, E. H.....	1914	Townsend, D. T.....	1904
Ternan, E. A.....	1910	Traill, J. J.....	1905
Thom, W. H.....	1910	Treadgold, W. M.....	1905
Thomas, G. C.....	1911	Trees, S. L.....	1903
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Thompson, J. M.....	1913	Treloar, G. E.....	1914
Thompson, P. M.....	1907	Tremaine, R. C. C. (deceased)	1895
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Thomson, D. J.....	1913	Tull, W. S.....	1914
Thomson, T. K.....	1886	Turnbull, W. G.....	1909
Thomson, R. W.....	1892	Turner, W. E.....	1905
Thomson, S. E.....	1904	Tuttle, H. A.....	1917
Thomson, L. R.....	1905-1907	Twidale, E. A. (deceased)....	1914
Thomson, J. E.....	1906	Tye, H. W.....	1908
Thomson, O. R.....	1907	Tyrrell, E. J.....	1917
Thorne, S. M.....	1900	Tyrrell, J. W.....	1883
Thornley, J. H.....	1908	Tyrrell, H. G.....	1886

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Uffelmann, W.....	1915	Ure, W. G.....	1913
Umbach, J. E.....	1903	Uren, A. E.....	1905
Underwood, J. E.....	1909		

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Van Allen, K. M. (deceased) ..	1910	Venney, L. T.....	1910
VanDyke, F. T.....	1914	Vercoe, H. L.....	1898
VanEvery, W. W.....	1899	Verity, M. F.....	1914
VanNorman, C. P.....	1908-1909	Vickers, N.....	1911
VanNostrand, J.....	1909	Vickery, C. L. (deceased)....	1906
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Vaughan, J. M.....	1905	Von Gunten, C. F.....	1913

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Waddell, H. O.....	1914	White, F. C.....	1909
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Wagner, H. W.....	1914	Whitelaw, A. R.....	1909
Wagner, N.....	1910	Whitley, P. L.....	1914
Wagner, W. E.....	1899	Whitside, J. L. (deceased)....	1910
Wagner, H. L.....	1905	Wickens, W. S.....	1910
Waite, J. H. C.....	1911	Wickett, T.....	1889
Walcott, W. D.....	1911	Wickett, W. E. (deceased)....	1906
Waldron, J.....	1903	Widdicombe, A. E.....	1916
Walker, E. W. (deceased)....	1904	Wiggins, T. H.....	1890
Walker, R. M.....	1910	Wigle, A. E.....	1914
Walker, W. J.....	1907	Wigle, J. A. H.....	1914
Walker, J. A.....	1908	Wilkes, E. D.....	1907
Walker, C. M.....	1909	Wilkes, G. H.....	1911
Wallace, G. L.....	1911	Wilkinson, T. A.....	1898
Wallace, H. D. M. (deceased) 1914		Wilkinson, R. G.....	1909
Walton, T. (deceased).....	1910	Williams, C. G.....	1903
Wanless, A. A.....	1902	Williams, E. R.....	1911
Ward, A. L.....	1915	Williams, J. A. McK.....	1909
Ward, F. W.....	1916	Williams, J. N.....	1915
Ward, R. C.....	1916	Williams, G. K. (deceased)....	1910
Wardell, A.....	1911	Williamson, O. T. G.....	1909
Warrington, G. A.....	1910	Williamson, D. A.....	1898
Wass, S. B.....	1903	Willson, R. D. (deceased)....	1901
Watson, F. E.....	1911	Wilson, A. C.....	1914
Watson, H. R.....	1917	Wilson, A. F.....	1907
Watson, M. B.....	1910	Wilson, F. D.....	1908
Watson, R. B. (deceased)....	1893	Wilson, F. F.....	1909
Watson, J. P.....	1904	Wilson, H. A.....	1911
Watt, G. H.....	1899	Wilson, H. P.....	1914
Watts, R. E. (deceased)....	1913	Wilson, J. C.....	1915
Waugh, B.....	1908	Wilson, J. N.....	1906
Webb, C. E.....	1909	Wilson, J. M.....	1908
Webb, E. E.....	1909	Wilson, L. R.....	1909
Webster, C. A.....	1913	Wilson, N. D.....	1903
Webster, H.....	1913	Wilson, W. H.....	1910
Wedlake, R. M.....	1908	Wing, D. O.....	1908
Weeks, M. B.....	1897	Winters, W. S.....	1913
Weir, D. H.....	1913	Withrow, W. J. (deceased)....	1890
Weir, F. E.....	1915	Withrow, F. D.....	1900
Weir, H. M.....	1900	Wood, C. S.....	1911
Weir, J. M.....	1904	Wood, E. M.....	1906
Weir, R. P.....	1908	Wood, G.....	1917
Weldon, E. A.....	1897	Wood, H. A.....	1915
Welford, P. G.....	1911	Wood, R. F. B.....	1913
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Wells, A. R.....	1916	Woods, M. H.....	1907
Weppler, H. S.....	1916	Wookey, S. A.....	1909
West, A. M.....	1908	Worden, W. G.....	1911
West, C. W.....	1915	Workman, G. R.....	1910
Wheler, A. G.....	1911	Worthington, W. R.....	1904
Whelihan, J. A.....	1903	Wright, A. J.....	1913
White, A. V.....	1892	Wright, C. H. C.....	1888
White, H. F.....	1903	Wright, G. W. A.....	1907
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THE
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University of Toronto



FACULTY OF
APPLIED SCIENCE AND ENGINEERING
1919-1920

UNIVERSITY OF TORONTO PRESS

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Mon.	6 13 20 27	Mon.	3 10 17 24 ..	Mon.	3 10 17 24 31	Mon.	7 14 21 28
Tues.	7 14 21 28	Tues.	4 11 18 25 ..	Tues.	4 11 18 25 ..	Tues.	1 8 15 22 29
Wed.	1 8 15 22 29	Wed.	5 12 19 26 ..	Wed.	5 12 19 26 ..	Wed.	2 9 16 23 30
Thur.	2 9 16 23 30	Thur.	6 13 20 27 ..	Thur.	6 13 20 27 ..	Thur.	3 10 17 24 ..
Fri.	3 10 17 24 31	Fri.	7 14 21 28 ..	Fri.	7 14 21 28 ..	Fri.	4 11 18 25 ..
Sat.	4 11 18 25 ..	Sat.	1 8 15 22 ..	Sat.	1 8 15 22 29 ..	Sat.	5 12 19 26 ..
MAY		JUNE		JULY		AUGUST	
Sun.	4 11 18 25	Sun.	1 8 15 22 29	Sun.	6 13 20 27	Sun.	3 10 17 24 31
Mon.	5 12 19 26	Mon.	2 9 16 23 30	Mon.	7 14 21 28	Mon.	4 11 18 25 ..
Tues.	6 13 20 27	Tues.	3 10 17 24 ..	Tues.	1 8 15 22 29	Tues.	5 12 19 26 ..
Wed.	7 14 21 28	Wed.	4 11 18 25 ..	Wed.	2 9 16 23 30	Wed.	6 13 20 27 ..
Thur.	1 8 15 22 29	Thur.	5 12 19 26 ..	Thur.	3 10 17 24 31	Thur.	7 14 21 28 ..
Fri.	2 9 16 23 30	Fri.	6 13 20 27 ..	Fri.	4 11 18 25 ..	Fri.	1 8 15 22 29 ..
Sat.	3 10 17 24 31	Sat.	7 14 21 28 ..	Sat.	5 12 19 26 ..	Sat.	2 9 16 23 30 ..
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Sun.	7 14 21 28	Sun.	5 12 19 26	Sun.	2 9 16 23 30	Sun.	7 14 21 28
Mon.	1 8 15 22 29	Mon.	6 13 20 27	Mon.	3 10 17 24 ..	Mon.	1 8 15 22 29
Tues.	2 9 16 23 30	Tues.	7 14 21 28	Tues.	4 11 18 25 ..	Tues.	2 9 16 23 30
Wed.	3 10 17 24 ..	Wed.	1 8 15 22 29	Wed.	5 12 19 26 ..	Wed.	3 10 17 24 31
Thur.	4 11 18 25 ..	Thur.	2 9 16 23 30	Thur.	6 13 20 27 ..	Thur.	4 11 18 25 ..
Fri.	5 12 19 26 ..	Fri.	3 10 17 24 31	Fri.	7 14 21 28 ..	Fri.	5 12 19 26 ..
Sat.	6 13 20 27 ..	Sat.	4 11 18 25 ..	Sat.	1 8 15 22 29 ..	Sat.	6 13 20 27 ..

1920		CALENDAR				1920	
JANUARY		FEBRUARY		MARCH		APRIL	
Sun.	4 11 18 25	Sun.	1 8 15 22 29	Sun.	7 14 21 28	Sun.	4 11 18 25
Mon.	5 12 19 26	Mon.	2 9 16 23 ..	Mon.	1 8 15 22 29	Mon.	5 12 19 26
Tues.	6 13 20 27	Tues.	3 10 17 24 ..	Tues.	2 9 16 23 30	Tues.	6 13 20 27
Wed.	7 14 21 28	Wed.	4 11 18 25 ..	Wed.	3 10 17 24 31	Wed.	7 14 21 28
Thur.	1 8 15 22 29	Thur.	5 12 19 26 ..	Thur.	4 11 18 25 ..	Thur.	1 8 15 22 29
Fri.	2 9 16 23 30	Fri.	6 13 20 27 ..	Fri.	5 12 19 26 ..	Fri.	2 9 16 23 30
Sat.	3 10 17 24 31	Sat.	7 14 21 28 ..	Sat.	6 13 20 27 ..	Sat.	3 10 17 24 ..
MAY		JUNE		JULY		AUGUST	
Sun.	2 9 16 23 30	Sun.	6 13 20 27	Sun.	4 11 18 25	Sun.	1 8 15 22 29
Mon.	3 10 17 24 31	Mon.	7 14 21 28	Mon.	5 12 19 26	Mon.	2 9 16 23 30
Tues.	4 11 18 25 ..	Tues.	1 8 15 22 29	Tues.	6 13 20 27	Tues.	3 10 17 24 31
Wed.	5 12 19 26 ..	Wed.	2 9 16 23 30	Wed.	7 14 21 28	Wed.	4 11 18 25 ..
Thur.	6 13 20 27 ..	Thur.	3 10 17 24 ..	Thur.	1 8 15 22 29	Thur.	5 12 19 26 ..
Fri.	7 14 21 28 ..	Fri.	4 11 18 25 ..	Fri.	2 9 16 23 30	Fri.	6 13 20 27 ..
Sat.	1 8 15 22 29 ..	Sat.	5 12 19 26 ..	Sat.	3 10 17 24 31	Sat.	7 14 21 28 ..
SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
Sun.	5 12 19 26	Sun.	3 10 17 24 31	Sun.	7 14 21 28	Sun.	5 12 19 26
Mon.	6 13 20 27	Mon.	4 11 18 25 ..	Mon.	1 8 15 22 29	Mon.	6 13 20 27
Tues.	7 14 21 28	Tues.	5 12 19 26 ..	Tues.	2 9 16 23 30	Tues.	7 14 21 28
Wed.	1 8 15 22 29	Wed.	6 13 20 27 ..	Wed.	3 10 17 24 ..	Wed.	1 8 15 22 29
Thur.	2 9 16 23 30	Thur.	7 14 21 28 ..	Thur.	4 11 18 25 ..	Thur.	2 9 16 23 30
Fri.	3 10 17 24 ..	Fri.	1 8 15 22 29 ..	Fri.	5 12 19 26 ..	Fri.	3 10 17 24 31
Sat.	4 11 18 25 ..	Sat.	2 9 16 23 30 ..	Sat.	6 13 20 27 ..	Sat.	4 11 18 25 ..

CALENDAR 1919-1920.

- 1919—Sept. 1 Applications for Registration received.
Last day for receiving applications for Supplemental Examinations.
- Sept. 25 Supplemental Examinations begin.
29 Meeting of Faculty Council.
Enrolment.
30 First Term begins.
Last day for receiving Vacation Work.
President's address to students at 3 p.m.
- Oct. 3 Meeting of Faculty Council.
15 Meeting of Engineering Society.
29 Meeting of Engineering Society.
- Nov. 7 Meeting of Faculty Council.
12 Meeting of Engineering Society.
26 Meeting of Engineering Society.
- Dec. 5 Meeting of Faculty Council.
10 Meeting of Engineering Society.
19 First Term ends at 12 noon.
- 1920—Jan. 6 Second Term begins.
Last day for receiving Theses for B.A.Sc.
9 Meeting of Faculty Council.
14 Meeting of Engineering Society.
28 Meeting of Engineering Society.
- Feb. 6 Meeting of Faculty Council.
11 Meeting of Engineering Society.
25 Meeting of Engineering Society.
- Mar. 5 Meeting of Faculty Council.
10 Meeting of Engineering Society.
12 Annual elections of Engineering Society.
24 Annual Meeting of Engineering Society.
- April 1 Meeting of Faculty Council.
2 Good Friday—Building closed.
5 Lectures and practical work close.
9 Annual Examinations begin.
- May 2 Meeting of Faculty Council.
- June 4 Annual Commencement.

The buildings will be closed on all public holidays and daily at noon during July and August.

University of Toronto.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

President.....R. A. FALCONER, LL.D., D.Litt., C.M.G.
Dean of Faculty.....W. HODGSON ELLIS, M.A., M.B.
Secretary of Faculty.....A. T. LAING, B.A.Sc.
Bursar.....F. A. MOURÉ, Esq.

G. R. ANDERSON, M.A. <i>Associate Professor of Physics.</i>	74 Isabella Street.
R. W. ANGUS, B.A.Sc., Mem. Am. Soc. M.E. <i>Professor of Mechanical Engineering.</i>	42 Howland Ave.
E. G. R. ARDAGH, B.A.Sc., <i>Assistant Professor of Applied Chemistry.</i>	Chem. & Mining Bldg.
L. M. ARKLEY, M.Sc., M.E.I.C. <i>Assistant Professor in Mechanical Engineering.</i>	61 Indian Rd. Crescent
J. W. BAIN, B.A.Sc., <i>Professor of Chemical Engineering.</i>	393 Brunswick Ave. (On war service.)
M. C. BOSWELL, M.A., Ph.D., <i>Associate Professor of Organic Chemistry.</i>	University of Toronto.
J. R. COCKBURN, B.A.Sc., A.M.E.I.C. <i>Associate Professor of Descriptive Geometry.</i>	100 Walmer Rd.
S. R. CRERAR, B.A.Sc., D.L.S., <i>Lecturer in Surveying.</i>	122 Grenadier Rd.
W. HODGSON ELLIS, M.A., M.B., <i>Professor of Applied Chemistry.</i>	86 Woodlawn Ave. E.
P. GILLESPIE, M.Sc., C.E., M.E.I.C., <i>Associate Professor of Applied Mechanics.</i>	358 Davenport Rd.
G. A. GUESS, M.A., <i>Professor of Metallurgy.</i>	Oakville.
H. E. T. HAULTAIN, C.E., M.I.M.M., <i>Professor of Mining Engineering.</i>	50 St. George St.
A. T. LAING, B.A.Sc., <i>Assistant Professor of Applied Mechanics.</i>	146 Balmoral Ave.
T. R. LOUDON, B.A.Sc., <i>Assistant Professor of Ferro-Metallurgy.</i>	189 Sheldrake Blvd.
A. WELLESLEY McCONNELL, B.A.Sc., <i>Assistant Professor of Architecture.</i>	36 Prince Arthur Avenue
J. MCGOWAN, B.A., B.A.Sc., <i>Professor of Applied Mechanics.</i>	Engineering Building.

H. W. PRICE, B.A.Sc., <i>Associate Professor of Electrical Engineering.</i>	474 Palmerston Ave.
T. R. ROSEBRUGH, M.A., <i>Professor of Electrical Engineering.</i>	92 Walmer Rd.
L. B. STEWART, O.L.S., D.T.S., <i>Professor of Surveying and Geodesy.</i>	161 Admiral Rd.
J. J. TRAILL, B.A.Sc., <i>Lecturer in Hydraulics.</i>	15 Fulton Ave.
W. M. TREADGOLD, B.A., <i>Assistant Professor of Surveying.</i>	13 Woodlawn Ave. E.
C. H. C. WRIGHT, B.A.Sc., Mem. O.A.A., <i>Professor of Architecture.</i>	419 Markham St.
C. R. YOUNG, B.A.Sc., C.E., M.E.I.C. <i>Assistant Professor of Structural Engineering.</i>	98 Hilton Ave.

Sessional Appointments.

J. L. BANKS, <i>Instructor in Modelling.</i>	176 Kingston Rd.
E. W. BANTING, B.A.Sc., <i>Lecturer in Surveying.</i>	101 Farnham Ave.
J. H. BILLINGS, B.A.Sc., S.M., Assoc. Mem. Am. Soc. M.E., Weston, Ont. <i>Lecturer in Machine Design.</i>	
J. T. BURT-GERRANS, M.A., Phm.B., <i>Lecturer in Electrochemistry.</i>	46 Dewson St.
A. R. CLUTE, B.A., LL.B., <i>Lecturer on Law of Partnership and Limited Companies.</i>	47 Elgin Ave.
A. R. DUFF, <i>Demonstrator in Applied Chemistry.</i>	211 Fern Ave.
F. C. DYER, B.A.Sc., <i>Lecturer in Mining Engineering.</i>	233 Ashworth Ave.
W. S. FERGUSON, C.A., <i>Lecturer in Accountancy.</i>	52 Tranby Ave.
W. R. FETZER, B.A., <i>Demonstrator in Electrochemistry.</i>	120 Brunswick Ave.
H. J. FRANKLIN, B.A.Sc., <i>Demonstrator in Drawing.</i>	72 Delaware Ave.
G. H. HALLY, B.A.Sc., <i>Demonstrator in Mechanical Engineering.</i>	74 Duggan Ave.
R. W. HARRIS, B.A.Sc., <i>Demonstrator in Drawing.</i>	100 Cowan Ave.
W. S. GUEST, B.A.Sc., <i>Lecturer in Electrical Engineering.</i>	30 McMaster Ave.
C. W. JEFFERYS, A.R.C.A., Mem. O.S.A., <i>Instructor in Freehand Drawing.</i>	York Mills

- J. T. KING, B.A.Sc., 87 Pine Crest Rd.
Lecturer in Mining Engineering.
- MISS J. C. LAING, B.A., 22 Pinewood Ave.
Instructor in French.
- H. M. LANCASTER, B.A.Sc., 22 Palmerston Gardens
Instructor in Applied Chemistry.
- J. M. LYLE, 19 Avondale Rd.
Instructor in Architectural Design.
- H. H. MADILL, B.A.Sc., Mem. O.A.A., 88 Woodlawn Ave. W.
Lecturer in Architecture.
- O. MARGISON, B.A.Sc., 62 College St.
Demonstrator in Drawing.
- A. S. MATHERS, B.A.Sc., 142 Bloor St. W.
Instructor in Architecture.
- J. W. MELSON, B.A.Sc., 69 Walmsley Blvd.
Demonstrator in Strength of Materials and Physics.
- J. H. PARKIN, B.A.Sc., 10 Columbine Ave.
Lecturer in Mechanical Engineering.
- C. W. RICHARDSON, B.A.Sc., Harcroft Rd.
Instructor in Drawing.
- F. SIMPSON, 15 Lakeview Ave.
Instructor in Modelling.
- W. J. SMITHER, B.A.Sc., A.M.E.I.C., Pensax Court
Lecturer in Structural Engineering.
- A. P. THOMSON, B.A.Sc., 88 Binscarth Rd.
Demonstrator in Drawing.
- G. L. WALLACE, B.A.Sc., 237 High Park Ave.
Demonstrator in Physics.
- F. E. WATSON, B.A.Sc., 447 Manning Ave.
Demonstrator in Drawing.
- W. J. T. WRIGHT, B.A.Sc., 419 Markham St.
Demonstrator in Drawing.
- A. R. ZIMMER, B.A.Sc., 80 Pine Crest Road
Lecturer in Electrical Engineering.

**MEMBERS OF OTHER FACULTIES GIVING INSTRUCTION TO
STUDENTS IN APPLIED SCIENCE.**

F. B. ALLAN, M.A., Ph.D., <i>Associate Professor of Organic Chemistry.</i>	380 Brunswick Ave.
ALFRED BAKER, M.A., LL.D., <i>Professor of Mathematics.</i>	81 Madison Ave.
S. BEATTY, Ph.D., <i>Assistant Professor of Mathematics.</i>	44 Pinewood Rd.
B. A. BENSLEY, B.A., Ph.D., <i>Professor of Zoology.</i>	37 Admiral Rd.
C. A. CHANT, M.A., Ph.D., <i>Associate Professor of Astro-Physics</i>	201 Madison Ave.
W. A. CLEMENS, M.A., Ph.D., <i>Lecturer in Elementary Biology.</i>	34 Boswell Ave.
A. P. COLEMAN, M.A., Ph.D., <i>Professor of Geology.</i>	476 Huron St.
A. T. DeLURY, M.A., <i>Professor of Mathematics.</i>	University of Toronto
B. FAIRLEY, M.A., Ph.D., <i>Associate Professor of German.</i>	21 McMaster Ave.
J. H. FAULL, B.A., Ph.D., <i>Associate Professor of Botany.</i>	102 Yorkville Ave.
J. G. FITZGERALD, M.B., <i>Associate Professor of Hygiene.</i>	186 Balmoral Ave.
W. J. LOUDON, B.A., <i>Professor of Mechanics.</i>	139 Cottingham St.
M. A. MACKENZIE, M.A., F.I.A., <i>Professor of Mathematics.</i>	1 Bellwoods Park
W. L. MILLER, B.A., Ph.D., <i>Professor of Physical Chemistry.</i>	50 St. Albans St.
G. H. NEEDLER, B.A., Ph.D., (Leipsic) <i>Professor of German.</i>	103 Bedford Rd.
W. A. PARKS, B.A., Ph.D., <i>Professor of Palaeontology.</i>	69 Albany Ave.
A. L. PARSONS, B.A., <i>Assistant Professor of Mineralogy.</i>	47 St. Vincent St.
L. J. ROGERS, B.A.Sc., <i>Assistant Professor of Analytical Chemistry.</i>	29 Rosemount Ave.
T. L. WALKER, M.A., Ph.D., <i>Professor of Mineralogy.</i>	20 Avondale Ave.
E. M. WALKER, B.A., M.B., <i>Associate Professor of Biology.</i>	67 Alcina Ave.
J. S. WILL, B.A., <i>Professor of French.</i>	56 Ranleigh Ave.

Sessional Appointments.

H. S. MCKELLAR, B.A., <i>Lecturer in French.</i>	41 McFarland Ave.
A. MACLEAN, B.A., <i>Lecturer in Geology.</i>	102 College St.
I. R. POUNDER, M.A., <i>Lecturer in Mathematics.</i>	21 Hazelton Ave.
J. E. THOMSON, B.A.Sc., <i>Lecturer in Mineralogy.</i>	57 Queen's Park

FACULTY OF APPLIED SCIENCE AND ENGINEERING.**Historical Sketch.**

The Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practical Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By the terms of this order the management and discipline of the School was vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degrees in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

By the University Act, 1906, the School of Practical Science was united to the University of Toronto as its Faculty of Applied Science and Engineering.

GRADUATING DEPARTMENTS.

There are eight regular Departments of Instruction leading to the degree of Bachelor of Applied Science:—

- 1 Civil Engineering.
2. Mining Engineering.
3. Mechanical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical Engineering.
8. Metallurgical Engineering.

The instruction given in these departments extends over a period of four years and is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such training as may make him immediately useful when he commences professional work.

DEGREE OF MASTER OF APPLIED SCIENCE (M.A.Sc.).

(For requirements, see page 72.)

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem. E.), as the case may be, subject to the rules and regulations established by the University. (See page 72.)

FELLOWSHIPS.

Fellowships of the value of \$500 each, open to graduates, are offered annually in the various departments.

Applications for these fellowships are to be made annually in writing to the Secretary of the Faculty on or before the 1st day of May.

SCHOLARSHIPS.

The Boiler Inspection and Insurance Company of Canada offers a Scholarship in the Department of Mechanical Engineering of the value of \$130.00 to the student who obtains highest Honour Standing in the regular examinations of the third year.

The successful candidate will be expected to proceed to his fourth year during the session next following the date of the award.

The amount of the award will be credited by the Bursar to the fees of the fourth year of the successful candidate.

The Engineering Alumni Association offers four scholarships of the value of \$100.00 each and four of \$50.00 each to students registered in the First year in the Faculty of Applied Science and Engineering. The awards in the first instance will be made on the results of a competitive examination which will be held early in October. The subjects of this examination include Mathematics, three papers; Science, two papers; English, two papers. In Mathematics the papers will be based on the work prescribed for Honour Matriculation and in Science on that prescribed for Junior Matriculation. In English the papers will consist of Composition and a test of the candidate's power to understand sight passages.

The scholarships are subject to the following regulations:

1. The scholarships will be divided *pro rata* between candidates who have seen active service in some theatre of the recent war and those who have not, but one \$100.00 scholarship, at least, will be reserved for the former class, providing any compete.

2. No candidate will be eligible to compete who has previously taken academic work in any Faculty of any University.

3. The candidate must obtain at least seventy per cent. on the aggregate of the marks obtainable in any year. Pass standing only will be required from active service men for the first year, but thereafter they must meet the same requirements as other successful candidates.

4. The candidate must, in addition to the above requirements, receive, year by year, the recommendation of the head of his department as to his general fitness to merit the award.

5. Failure to meet the above requirements in any one year will cause the forfeiture of the award for that year but will not debar the holder of a scholarship from regaining his standing by meeting the requirements in succeeding years.

6. If the holder of a scholarship fails to pass in any one year or is absent from the University for any cause other than illness, his scholarship will thereafter be wholly forfeited.

MATRICULATION.

1. The matriculation requirements of this Faculty are based upon those given in the curriculum for Junior Matriculation, a copy of which may be obtained on application.

2. A candidate for matriculation must produce satisfactory certificates of good character.

3. The subjects are as follows:

English, History, any three of the following, viz., Greek, Latin, French, German, Experimental Science, with pass standing in Honour Mathematics.

Beginning with the session 1920-1921 matriculation requirements will be as follows:

Part I, Junior Matriculation.

Part II, Honour Mathematics, pass standing in Honour English and in one of the following Honour subjects: Greek, Latin, French, German, Spanish.

In selecting the options it is recommended that students take French, German and Experimental Science. In the department of Architecture French is required and in Chemical Engineering German is required.

4. The pass standard is forty per cent. of the marks assigned to a paper, with an average of sixty per cent.

5. A candidate who has obtained an average of sixty per cent. on all the papers but has failed to obtain forty per cent. in not more than two papers may complete matriculation by passing on these papers at any one subsequent examination.

6. A candidate who has obtained forty per cent. on each of at least eight papers, with an average of sixty per cent. on the same, will be credited with these papers. In order to complete his Matriculation, he must obtain at one subsequent examination forty per cent. on each of the remaining papers, with an average of sixty per cent.

7. The examination for pass and honour Junior Matriculation is held annually in June at centres in Ontario, and, if application is made to the Senate, the examination may, with the co-operation of the Department of Education, be held at centres outside Ontario.

8. Applications accompanied by the fee of \$5.00 must be sent not later than the 15th of May to the local Public School Inspector, or in the case of candidates intending to write at the University, to the Registrar.

9. A Junior Matriculation examination, at which no honour papers are set, will be held in September at the University and at such other centres as may from time to time be authorized. Candidates entitled to the privileges of supplemental examinations, as well as new candidates, may present themselves at this examination.

10. Applications to write on the September examination, together with the necessary fee, must be received at the Department of Education not later than September 1, for those who wish to write at any centre established in Ontario, and not later than August 1 for any centre elsewhere in Canada.

11. Forms of application, the time-table of the September examination, and further particulars may be had upon application to the Department of Education.

ADMISSION.

A candidate for admission must have completed the seventeenth year of his age on or before the first of October of the year in which he seeks to enter.

Applications for admission must be made on blank forms supplied by the Registrar, and should be forwarded early in September.

Applications will be considered from (a) those who have completed matriculation, including those who hold certificates recognized as equivalent—see matriculation curriculum—, (b) those who have failed in not more than two papers of the matriculation examination. The latter must complete matriculation before being eligible to enter the second year.

Applications based upon other certificates than those mentioned will be considered as occasion may require. Such certificates must be accompanied by an official statement of the marks in the various subjects upon which the certificate was granted.

ADMISSION AD EUNDEM STATUM.

An undergraduate of another University may be admitted *ad eundem statum* on such conditions as the Senate on the recommendation of the Council of the Faculty may prescribe.

An applicant for admission *ad eundem statum* must submit with his petition (1) a calendar of his University giving a full statement of the courses of instruction; (2) an official certificate of character and academic standing.

REGISTRATION.

Registration in the various years will begin Sept. 1st. Blank cards for the purpose will be supplied by the Secretary on request. (See "Dues and Deposits," next page.)

FEES.

All fees are payable at the Bursar's office between the hours 10 a.m. and 1 p.m. of each week day except Saturday.

The annual fees including tuition, library, laboratory supplies and one annual examination shall be as follows:

First Year.

If paid in full on or before November 5th..... \$100.00

By instalments:

First instalment, if paid on or before November 5th..... 50.00

Second instalment, if paid on or before February 5th..... 55.00

Second Year.

If paid in full on or before November 5th..... \$110.00

By instalments:

First instalment, if paid on or before November 5th..... 55.00

Second instalment, if paid on or before February 5th..... 60.00

Third and Fourth Years.

If paid in full on or before November 5th..... \$120.00

By instalments:

First instalment, if paid on or before November 5th..... 60.00

Second instalment, if paid on or before February 5th..... 65.00

Repeating the Year.

If paid in full on or before November 5th..... \$50.00

The above fees are payable in advance. After November 5th a penalty of \$1.00 per month will be imposed until the whole amount is paid. In the case of payment by instalments the same rule as to penalty will apply.

Students desiring to pay in instalments must have paid the fees due in the first term before proceeding to the work of the second term.

General Fees.

Matriculation, or registration of Matriculation.....	\$ 5.00
Supplemental examination.....	10.00
Admission <i>ad eundem statum</i>	10.00
Degree of B.A.Sc. (payable not later than April 1st).....	10.00
Degree of M.A.Sc.....	25.00

Dues and Deposits.

(Payable to the Secretary of the Faculty at the time of registration.)

Engineering Society membership.....	\$2.00
Annual deposit, Departments 1, 3, 4, 7.....	2.00
Departments 2, 5, 6, 8.....	5.00

Charges for waste, neglect and breakage are to be met out of the deposit fee, the balance of which will be refunded to the student at the end of the session.

Students' Council Fee.

The Annual Fee..... \$2.00

Every male student in attendance, proceeding to the Degree of Bachelor of Applied Science and Engineering, is required to pay to the Bursar, at the time of the entry of his name with the Secretary, the Annual Fee of two dollars, for the maintenance of the Council of the Undergraduates.

GENERAL INFORMATION FOR STUDENTS.

The Council of University College and the governing bodies of the federated universities and colleges, respectively, have disciplinary jurisdiction over and entire responsibility for the conduct of their students in respect of all matters arising or occurring in or upon their respective college buildings and grounds, including residences.

The councils of such of the faculties as have assigned for their separate use any building or buildings and grounds, including residences, have disciplinary jurisdiction over and entire responsibility for the conduct of all students in their respective faculties in respect of all matters arising or occurring in or upon such building, or buildings and grounds.

In all such cases, and, save as aforesaid, as respects all students to whatsoever college or faculty they may belong, disciplinary jurisdiction is vested in the Caput, but the Caput may delegate its authority in any particular case or by any general regulation to the council or other governing body of the university or college or faculty to which the student belongs.

The Caput has also power and authority to determine by general regulations, or otherwise, to what college, faculty or other body the control of university associations belongs.

If there be any questions as to the proper body to exercise jurisdiction in any matter of discipline which may arise, the same shall be determined by the Caput, whose decision shall be final.

Disciplinary jurisdiction includes the power to impose fines.

REGULATIONS RESPECTING STUDENTS.

No student will be enrolled in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Council to be prejudicial to the interests of the University.

All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council. In particular, students of all Faculties are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles". Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

Any student who may be convicted of having taken part in processions through the city, which have not been authorized by the police authorities after application by the Executive of the Students' Council, will be severely disciplined.

All students shall be in attendance during the whole of each term. Those whose attendance or work is reported as unsatisfactory are liable to dismissal by the Council.

No student will be allowed to repeat the work of any year more than once.

Information as to the text-books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

PHYSICAL TRAINING

By order of the Board of Governors each male student proceeding to a degree must take Physical Training in the first and second years of his attendance. He must first undergo a medical examination by the Physical Director of the University to determine the character of his training.

OPTIONS.

In the fourth year, optional courses are arranged in certain departments. Students are required to submit their selection to the Secretary in writing, not later than September 15th. The proposed selection must be approved by Council before adoption.

REGULATIONS RESPECTING EXAMINATIONS.**Regular Examinations.**

A student who in either term of the session fails to perform the work of his course in a manner satisfactory to the professors in charge, will not be allowed to present himself at the final examinations of the year.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the annual examinations in April, notice in writing of their intention to take such examinations. A penalty of \$1.00 will be imposed upon all candidates who fail to give notice within the proper time.

In the second, third and fourth years annual examinations will be held at the beginning of the second term on all subjects completed during the first term.

No student will be allowed to write at the annual examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examination will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, electrical design, optics, surveying and architecture, the drawings set in these subjects must be made.

Candidates who fail in passing the annual examinations will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

Term Examinations.

In the first year only, term examinations in three subjects will be held on the last two days of the first term.

The subjects will not be announced until the day previous to the first examination.

The results of these examinations will be incorporated with those of the annual examinations in the same subjects in the ratio of 1 to 2.

Supplemental Examinations.

A candidate who fails in one or two subjects at the Annual Examinations will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 25th of September, 1919. Candidates are required to send to the Secretary of the Faculty not later than the first of September, notice in writing of their intention to take such examinations, and to remit to the Bursar the fee of \$10.00. A penalty of \$1.00 will be imposed upon all candidates who fail to give notice within the time stated.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Vacation Work.

Vacation work must be handed in on or before the first day of the session.

Vacation notes must be on construction only, except in Department 2 (see p. 73), and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be freehand pencil drawings with figured dimensions.

Notes must be made in standard note books approved of by the Faculty. Notes which have been taken during the session in connection with the work in drawing will not count as vacation work.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

Shop Work.

Students in Mechanical and Electrical Engineering are not considered as having completed their course of study, nor are degrees granted until certificates have been submitted to the Council, and accepted as satisfactory, showing not less than eight months of mechanical experience in production of some kind under commercial conditions. Preferably the work undertaken should be in one of the manufacturing industries or trades with which the Course is related.

It is not desirable that any student in these Courses should enter sales or other non-production departments of the engineering industries without having acquired some personal experience in mechanical production. It is best to obtain this experience under commercial conditions. Otherwise one can not at all appreciate shop conditions and limitations.

Honours.

Honours will be granted in each department to the students who obtain at least 40 per cent. in each subject, and 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Honour Graduate standing will be granted to those who obtain honours in the final and in one previous year.

REGULATIONS RESPECTING TERM WORK.

Students working in any laboratory must be governed by the regulations relating thereto as made known from time to time.

No laboratory reports or drawings may be removed from the laboratories without permission. The Council reserves the right to dispose of them as may be thought proper.

Field Work.

No field notes will be counted which have not been taken in the field and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

Drafting Rooms.

Drawings and briefs for same, that are required to be finished the first term of the session will not be counted unless finished in that term.

The minimum number of drawings in first and second years shall be twenty-five, and the maximum number thirty-five.

No drawings or briefs for same will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

Theses.

In the Fourth Year each student is required to prepare a thesis on a subject approved by the Council. The title of the thesis must be sent to the Secretary of the Faculty for approval on or before November 1st, and the completed thesis must be handed in not later than the first day of the second term and shall become the property of the University. The rules governing size, form, etc., may be obtained on application to the Secretary.

EXEMPTIONS.

Applications for exemption from any of the regulations must be made to the Council in writing and the particulars of the case fully stated.

COURSES OF INSTRUCTION.

On the following pages the courses of instruction in the various departments are set forth in detail. The time devoted to the various subjects, both for lectures and practical work, is indicated as accurately as possible but is subject to modifications from time to time as occasion seems to require. In the First Year the course is common to all departments except Architecture and Chemical Engineering (courses 4 and 6). In the Second Year the courses in Mechanical and Electrical Engineering (courses 3 and 7) are identical.

1. DEPARTMENT OF CIVIL ENGINEERING.

The courses of study in Civil Engineering are designed to give the student a sound training in the fundamental scientific principles on which the practice of the profession is based. The instruction is given by means of lectures and practical work in the field, the drafting room and the laboratory. In this way the student is led to apply the principles developed in the classroom.

Civil Engineering—First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying.....	205, 206	1	8	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry.....	75	2		2	
Electricity.....	135, 136	2		2	
Engineering Problems.....	193	1		1	
Drawing.....	117		11		20

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Spherical Trigonometry.....	191	1			
Elementary Astronomy.....	55	1		1	
Descriptive Geometry.....	121	1		1	
Surveying.....	207, 208	1	8	1	
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Optics.....	197	1	1½	1	1½
Hydrostatics.....	196			1	1
Engineering Chemistry.....	85			1	
Organic Chemistry.....	87	1			
Mineralogy.....	159, 161	2	1		3
Metallurgy.....	183			1	
Banking and Finance.....	66	1		1	
Drawing.....	123		8		15
Chemical Laboratory.....	81		3		3

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y
Vacation Work.....	220				
Least Squares.....	192			1	
Practical Astronomy and Geodesy.....	56, 57	2		2	
Surveying and Levelling....	209, 210	1	8	1	
Descriptive Geometry.....	127	1			
Hydraulics.....	29, 30	2		2	3
Photography.....	199	1	1½		1½
Ferro-Metallurgy.....	181	1		1	
Theory of Structures.....	18	2		2	
Cements and Concrete.....	21			1	
Engineering Chemistry....	94	1		1	
Geology.....	150	1		1	
Limited Companies.....	67	1		1	
Heat.....	198	1	1½		
Strength of Materials.....	14				2
Drawing.....	128		6		19

Fourth Year.

†Foundations.....	20	1	1	1	1
Electricity.....	140	1		1	
†Thermodynamics.....	34, 39a	1		1	2
Economic Geology.....	151	1		1	
Contracts and Specifications	68			1	
Thesis.....	219				
And one of					
(a) { Astronomy.....	58, 59	2	23	2	
{ Geodesy.....	60	2		2	23
(b) { Sanitary Engineer- ing.....	213	1½	16	1½	16
{ Highway Engineer- ing.....	214	1	6	1	6
(c) Structural Engineer- ing.....	215	6	22	7	22
(d) Strength of Materials	16, 17, 22, 23	3½	11	3½	11
with either :					
(1) Hydraulics.....	31, 31a, 32	3	10	3	10
or					
(2) Railway Engineering.	211, 212	2	11	2	11

† Not required of those taking the Astronomy option.

2. DEPARTMENT OF MINING ENGINEERING.

The course in Mining Engineering is intended to serve as a preliminary training for those who expect to practise the art of mining or metallurgy. In the second year it differs very little from the course in civil engineering, in the third year some subjects peculiar to mining and metallurgy are taken up.

In general this course is designed to first give the student a good training in the parts of engineering essential to all branches, such as surveying, drafting, etc., and then in the upper years to allow him to follow studies peculiar to mining engineering.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least six months' practical experience in work connected with mining, metallurgy or geology, for which they must have received regular wages. Certificate forms, giving full details as to acceptable classes of work, will be furnished on application, and should be obtained by all students before entering employment.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying.....	205, 206	1	8	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry.....	75	2		2	
Electricity.....	135, 136	2		2	
Engineering Problems.....	193	1		1	
Drawing.....	117		11		20

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	121	1		1	
Surveying.....	207, 208	1	9	1	
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Optics.....	197	1	1½	1	1½
Hydrostatics.....	196			1	1
Inorganic Chemistry.....	79	1			
Organic Chemistry.....	87	1			
Engineering Chemistry.....	85			1	
Mineralogy.....	157, 160	2	1		3
Geology.....	150	1		1	
Mining.....	170, 171	1	3		
Metallurgy.....	183			1	
Banking and Finance.....	66	1		1	
Drawing.....	123		3		14
Chemical Laboratory.....	81, 82		3		3

Mining Engineering—Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work.....	220				
Surveying and Levelling.....	209, 210	1	8		
Theory of Structures.....	19	2			
Hydraulics.....	29a	2		2	
Electricity.....	140	1		1	
Engineering Chemistry.....	94	1		1	
Analytical Chemistry.....	80	1		1	
Assaying.....	173	1	3		3
Petrography.....	163	1		1	
Mineralogy.....	164		2		2
Economic Geology.....	151, 156	1		2	2
Ore Deposits.....	155	1		1	
Mining.....	172			2	3
Ore Dressing.....	177	1		1	
Ferro-Metallurgy.....	181	1		1	
Metallurgy.....	184	1		1	
Limited Companies.....	67	1		1	
Drawing.....	132		7		2
Chemical Laboratory.....	93				11

Fourth Year.

Thermodynamics.....	34	1		1	
Electrochemistry.....	101	2			
Assaying.....	174			1	3
Petrography.....	165, 166	1	2	1	2
Geology, Archaean and Glacial.....	152	2	1	2	
Geology, Mining.....	153	1		1	
Mining.....	175	1		1	
Ore Dressing.....	179	1		1	
Metallurgy.....	180, 182	1		1	5
Cost-keeping, etc.....	70	1		1	
Milling.....	176				5
Power.....	32a, 39a, 141		3		2
Design.....	215		3		3
Chemical Laboratory.....	112		10		
Thesis.....	219		6		2

3. DEPARTMENT OF MECHANICAL ENGINEERING.

The course in this Department is designed to meet the needs of those students who are intending to take up the work connected with Mechanical Engineering, such as the design of gas engines, steam engines, steam boilers, steam turbines, air compressors, etc.; the design and installation of the machinery connected with power plants and central stations, steam piping and other similar problems. The work is also so arranged that the student becomes somewhat familiar with the design of travelling cranes and mill buildings and similar problems connected with structural steel work.

Since the work of the mechanical engineer and of the electrical engineer is closely allied, the courses in these two departments in the first two years are identical and cover the subjects mentioned below.

In the third year the work becomes more specialized, the mechanical engineers paying more attention to heat engines of various types, and to mill building design and other work of similar nature. The study of electricity is continued and the student gets considerable practice in the mechanical and electrical laboratories.

In the fourth year the student devotes himself still more closely to his chosen work, placing the greater stress on thermodynamics and the theory and testing of heat engines, and problems in machine design. Much time is spent in the mechanical laboratories testing gas and steam engines and other machines.

Before receiving the degree in this department candidates are required to present satisfactory evidence of having had at least eight months' practical experience in one of the principal trades connected with Mechanical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering, as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

Mechanical Engineering—First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying.....	205, 206	1	8	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry....	75	2		2	
Electricity.....	135, 136	2		2	
Engineering Problems.....	193	1		1	
Drawing.....	117		11		20

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	121	1		1	
Dynamics.....	12	1		1	
Theory of Mechanism.....	25	2		2	
Steam Engines.....	38	1			
Strength of Materials.....	13	2		2	
Optics.....	197	1	1½	1	1½
Hydrostatics.....	196			1	1
Electricity.....	138, 139	2	2½	2	2½
Engineering Chemistry.....	85			1	
Organic Chemistry.....	87	1			
Banking and Finance.....	66	1		1	
Drawing.....	123		13		11
Chemical Laboratory.....	81		3		3
Machine Tools.....	28a			1	

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work.....	220				
Mechanics of Machinery...	26	1		1	
Machine Design.....	27	2	6½	2	6½
Thermodynamics.....	33, 35	2	2	2	2
Heat Engines.....	39	1		1	
Hydraulics.....	29, 30	2		2	1
Theory of Structures.....	19	2			
Ferro-Metallurgy.....	181	1		1	
Magnetism and Electricity.	144, 142	2	3½	2	3½
Alternating Current.....	143	1		1	
Engineering Chemistry.....	94	1		1	
Limited Companies.....	67	1		1	
Strength of Materials.....	14		2		
Drawing.....	132		8		

Fourth Year.

Mill Building Design.....	24	1	3	1	3
Cost-keeping, etc.....	69	1		1	
Machine Design.....	28	1	4	1	4
Thesis.....	219				
And two of					
(d) Hydraulics.....	31, 31a, 32	3	9	3	9
(e) Strength of Materials	16, 17, 22, 23	3½	10	3½	10
(g) Thermodynamics....	36, 36a, 37	3	10	3	10

4. DEPARTMENT OF ARCHITECTURE

The instruction in this department is arranged to lay a broad foundation for the subsequent professional life of its graduates, and incidentally to prepare its students to be immediately useful in an architect's office. The curriculum has been arranged to meet the aesthetic and scientific needs of the profession, and includes History and Principles of Architecture, Free-hand Drawing in pencil, ink and color, Modelling, Architectural Design, Analysis and Criticism of Buildings, Mathematics, Statics, Strength and Elasticity of Materials, Theory of Construction and Heating and Ventilation.

The equipment of the department includes a working library of 1,000 volumes, a large file of periodicals, 2,500 photographs, 2,000 stereographic photos, 4,500 lantern slides, and a large collection of models and casts.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	116	1		1	
Building Measurement.....	52	1	9	1	
Statics.....	10	2		2	
Elementary Chemistry	75	2		2	
History and Principles of Architecture.....	40	1	3	1	
French.....	217	1		1	
Accounts.....	65	1		1	
Drawing.....	118		9		18
Freehand Drawing.....	49		2		2
Modelling.....	50		2		2

Second Year

Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	122	1		1	
Strength of Materials.....	13	2		2	
Optics and Lighting.....	197 ^a	1	1½		
Illumination.....	200			1	1½
Architectural Design.....	46	1		1	
History of Architecture....	41	1		1	

FACULTY OF APPLIED SCIENCE AND ENGINEERING. 31
Second Year—Continued.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Orders of Architecture.....	45	1		1	
History of Ornament.....	43	1		1	
French.....	217	1		1	
Banking and Finance.....	66	1		1	
Drawing					
Architectural Design }	125		17		17
Freehand Drawing... }	49a		2		2
Modelling.....	50a		2		2

Third Year.

Vacation Work.....	220				
Descriptive Geometry.....	131				
Acoustics.....	195	1	1½		
History of Architecture....	42	1		1	
History and Principles of Ornament.....	44	1		1	
Architectural Design.....	47	1		1	
Building Materials.	53	2		2	
Theory of Structures.....	19	2			
Cements and Concrete.....	21			1	
Limited Companies.....	67	1		1	
Strength of Materials.....	14				2
Photography.....	199	1	1½		1½
Modelling.....	50b		2		2
Water Color Painting.....	49b		2		2
Drawing	130		7		
Architectural Design }			6		22

Fourth Year.

Strength of Materials.....	22	1		1	6
Structural Design.....	51	1	1	1	1
Electricity.....	140	1		1	
Heating and Ventilating....	54a	1		1	
Sanitary Science.....	54	1		1	
Contracts and Specifications	68			1	
Thesis.....	219		3		3
Drawing from life.....	49c		2		2
Modelling from life.....	50c		2		2
And one of					
(l) Architectural Design.	48	2	17	2	17
(m) Architectural Engineering.....	216	4	19	3	23

5. DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.

The course in Analytical and Applied Chemistry is designed to furnish instruction suitable for those students who intend to practise chemistry as a profession, either as analysts or as works chemists.

(No new students are being accepted for this course, and in 1921 it will cease to exist.)

SUBJECTS OF INSTRUCTION.**Third Year.**

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.		Lect.	Lab'y.
Electrochemistry.....	101, 102	2	3		
Engineering Chemistry...	94	1		1	
Industrial Chemistry.....	95	1		1	
Organic Chemistry A.....	97	2		2	
Organic Chemistry B.....	98			1	
Chemical Plant.....	96	1		1	
Ferro-Metallurgy.....	181	1		1	
Metallurgy.....	184	1		1	
Economic Geology.....	151	2		2	
Crystallography.....	167	1		1	
Limited Companies.....	67	1		1	
German.....	218	1		1	
Chemical Laboratory.....	91		13		17
Assaying.....	173		1½		1½
Heat.....	198	1	1½		
Electricity.....	140			1	

Fourth Year.

Inorganic Chemistry.....	103	1	3	1	
Organic Chemistry.....	104	1	15	1	
Cost-keeping, etc....	69	1		1	
German.....	218	1		1	
Thesis.....	219				
And one of					
(h) Electrochemistry.....	108, 109	2	11	2	29
(i) Industrial Chemistry.	106, 107	1	12	1	30
(j) Sanitary and Forensic Chemistry and Bac- teriology.....	64, 110, 1111		12	2	29
(k) Metallurgy.....	1802		11	1	30

6. DEPARTMENT OF CHEMICAL ENGINEERING.

In many industries there is a demand for a man who combines the technical knowledge of the mechanical engineer with a knowledge of chemistry. It is to fill this want that the course in Chemical Engineering is designed.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term.	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry.....	75, 78	2	12	2	12
Mineralogy Laboratory....	158				3
Electricity.....	135, 136	2		2	
Biology Laboratory.....	62	3		3	
Engineering Problems.....	193	1		1	
Drawing.....	117		3		3

Second Year.

Vacation Work.....	220				
Calculus.....	190	2		2	
Strength of Materials.....	13	2		2	
Electricity.....	138, 139	2	2½	2	2½
Engineering Chemistry....	85			1	
Industrial Chemistry.....	86	1		1	
Organic Chemistry.....	88	2		2	
Physical Chemistry.....	90	2		2	
Inorganic Chemistry.....	79	1			
Optics.....	197	1	1½	1	1½
Hydrostatics.....	196			1	1
German.....	218	1		1	
Banking and Finance.....	66	1		1	
Drawing.....	123		6		6
Chemical Laboratory.....	84		10		10
Metallurgy.....	183			1	
Machine Tools.....	28a			1	

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term.	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work.....	220				
Theory of Structures.....	19	2			
Thermodynamics.....	33, 35	2	2	2	1½
Electrochemistry.....	101, 102	2	3		
Engineering Chemistry....	94	1		1	
Organic Chemistry A.....	97	2		2	
Organic Chemistry B.....	98			1	
Industrial Chemistry.....	95	1		1	
Analytical Chemistry.....	80	1		1	
Metallurgy.....	184	1		1	
Ferro-Metallurgy.....	181	1		1	
Chemical Plant.....	96	1		1	
Limited Companies.....	67	1		1	
German.....	218	1		1	
Machine Design.....	27	2	3½	2	3½
Assaying.....	173		1½		1½
Electricity.....	140			1	
Drawing.....	132		3		
Chemical Laboratory.....	92		8		11

Fourth Year.

Hydraulics.....	29a	2		2	
Inorganic Chemistry.....	103	1	3	2	
Organic Chemistry.....	104	1	13	1	
Cost-keeping, etc.....	69	1		1	
Power.....	32a, 141		2		2
German.....	218	1		1	
Thesis.....	219				
And one of					
(h) Electrochemistry.....	108	2	9	2	24
(i) Industrial Chemistry.	106, 107	1	10	1	25
(j) Sanitary and Forensic Chemistry and Bac- teriology.....	64, 110, 112	1	10	2	24
(k) Metallurgy.....	180	1	10	1	25

7. DEPARTMENT OF ELECTRICAL ENGINEERING.

The course in Electrical Engineering is arranged to provide preliminary training for those who would follow any of the various lines of activity connected with electrical industry.

The first two years of the course are devoted to fundamental scientific principles, and incidentally more or less of their application to engineering problems in mechanical, civil and electrical work. Many problems are solved in the drafting rooms by graphical methods. The third year includes further theoretical work, more particular attention being given to electrical and mechanical studies in theory, operation and design. The fourth year is devoted to advanced work in alternating current theory and practice combined with similar study in thermodynamics, hydraulics or electrochemistry.

A large amount of laboratory practice is provided, most of which belongs to the third and fourth years. In this last year most of the time is spent in laboratory investigations and studies resulting therefrom.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' mechanical experience in one of the principal trades connected with Electrical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying	205, 206	1	8	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry.....	75	2		2	
Electricity.....	135, 136	2		2	
Engineering Problems.....	193	1		1	
Drawing.....	117		11		22

Second Year.

Subject.	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Laby'.
Vacation Work.....	220				
Calculus.....	190	2		2	
Descriptive Geometry.....	121	1		1	
Optics.....	197	1	1½	1	1½
Hydrostatics.....	196			1	1
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Theory of Mechanism.....	25	2		2	
Steam Engines.....	38	1			
Electricity.....	138,139	2	2½	2	2½
Engineering Chemistry.....	85			1	
Organic Chemistry.....	87	1			
Banking and Finance.....	66	1		1	
Drawing.....	124		9		16
Chemical Laboratory.....	81		6		
Machine Tools.....	28a			1	

Third Year.

Vacation Work.....	220				
Mechanics of Machinery....	26	1		1	
Machine Design.....	27	2	3¼	2	3¼
Hydraulics.....	29,30	2		2	1
Thermodynamics.....	33,35	2	2	2	1½
Heat Engines.....	39	1		1	
Electrochemistry.....	101,102	2	3		
Magnetism and Electricity..	142	2		2	
Alternating Current.....	143	1		1	
Electrical Design.....	145	1	1½	1	3
Electrical Laboratory.....	144		4		4
Engineering Chemistry.....	94	1		1	
Ferro-Metallurgy.....	181	1		1	
Limited Companies.....	67	1		1	3

Fourth Year.

Applied Electricity.....	146,147	3	16	3	16
Cost Keeping, etc.....	69	1		1	
Thesis.....	219				
And one of:					
(d) Hydraulics.....	31, 31a, 32	3	9	3	9
(g) Thermodynamics.....	36, 36a, 37	3	9	3	9
(h) Electrochemistry.....	108, 109	2	9	2	9

8. DEPARTMENT OF METALLURGICAL ENGINEERING.

The object of this course is to provide instruction and preliminary training for those who intend to become metallurgical engineers. Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' experience in metallurgical work.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra.....	187	2		2	
Plane Trigonometry.....	189	2			
Analytical Geometry.....	188	1		2	
Descriptive Geometry.....	115	1		1	
Surveying.....	205, 206	1	8	1	
Statics.....	10	2		2	
Dynamics.....	11	2		2	
Elementary Chemistry....	75	2		2	
Electricity.....	135, 136	2		2	
Engineering Problems.....	193	1		1	
Drawing.....	117		11		20

Second Year.

Calculus	190	2		2	
Descriptive Geometry.....	121	1		1	
Dynamics.....	12	1		1	
Strength of Materials.....	13	2		2	
Hydrostatics.....	196			1	1½
Electricity.....	140			1	
Steam Engines.....	38	1			
Chemistry.....	79, 85	2		2	
Physical Chemistry.....	90	2		2	
Banking and Finance.....	66	1		1	
Chemical Laboratory.....	93		10		8
Mineralogy.....	169		1		1
Mining.....	170, 171	1	3	1	
Metallurgy.....	183, 185	1		2	2
Spanish.....		1		1	
Drawing.....	121		5		5

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Theory of Mechanism.....	25	2		2	
Hydraulics.....	29a	2		2	
Theory of Structures.....	19	2			
Limited Companies.....	67	1		1	
Analytical Chemistry.....	80		1		1
Electrochemistry.....	101, 102	2	3		
Ferro-Metallurgy.....	181	1		1	
Cement and Concrete.....	21			1	
Assaying.....	173	1	2		2
Metallurgy.....	186	1	1	4	6
Mining.....	172			2	3
Ore Dressing.....	177	1		1	
Heat.....	198	1	1½		
Chemical Laboratory.....	9		4		4
Drawing.....			3		

Fourth Year.

Thermodynamics.....	34	1		1	
Heat Engines.....	39	1		1	
Ore Dressing.....		2	2	2	4
Assaying.....	174			1	3
Cost-Keeping.....	70	1		1	
Plant Design.....		1	3	1	3
Power.....	32a, 39a, 141		3		3
Metallurgy.....	186a	2	8	2	8
Thesis.....	219		3		3

OUTLINE OF COURSES OF INSTRUCTION.

APPLIED MECHANICS.

10. STATICS:—*T. R. Loudon.*

Departments 1, 2, 3, 4, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with forces in a single plane, and concerns chiefly the calculation of tension, compression and shearing stresses in frame structures and solid beams. It also deals with the consideration of problems relating to friction.

11. DYNAMICS:—*J. McGowan.*

Departments 1, 2, 3, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with bodies having motion of translation in one plane; also with relative motion, momentum, work and energy.

Text book:—Tutorial Dynamics—Briggs and Bryan.

12. DYNAMICS OF ROTATION:—*W. J. Loudon.*

Departments 1, 2, 3, 7 and 8, II Year; 1 hour per week; both terms.

This course covers angular motion, including moments of inertia, simple harmonic motion, the pendulum, centres of mass, suspension and percussion, the simple theory of the fly-wheel and the governor.

Text book:—Dynamics of Rotation—Worthington.

13. STRENGTH OF MATERIALS:—*P. Gillespie.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; 2 hours per week; both terms.

In this course the strength and elasticity of materials are mathematically treated. The stresses in such elements of structures as the tie rod, the beam, the strut and the member subjected to shear are investigated and the elementary principles of design established. In the lecture and drafting rooms through numerous problems involving the design of simple beams, columns, riveted connections, etc., these principles are exemplified. The work includes also the discussion of eccentric loading, suddenly applied loads and repeated stresses.

Reference Book:—Mechanics of Materials—Merriman.

14. STRENGTH AND ELASTICITY OF MATERIALS:—*J. McGowan.*

Departments 1, 3 and 4, III Year; 2 hours per week; one term.

This course is intended to give the student an introduction to the experimental study of the strength and elasticity of materials. It is intended that he shall acquire some familiarity with the construction and operation of testing machines and with the properties of the ordinary building materials.

Reference Book:—Laboratory Instructions, Department of Applied Mechanics, U. of T., 1913.

16. THEORY OF STRUCTURES:—*J. McGowan.*

Departments 1 and 3, IV Year; 2 hours per week; both terms.

The work taken up in this course of lectures consists in swing bridges, arches, suspension bridges and some special features in column construction.

Reference Books:—Modern Framed Structures—Johnson. Typical Steel Railway Bridges—Thomson.

17. STRENGTH AND ELASTICITY OF MATERIALS:—*P. Gillespie.*

Departments 1, 3 and 4, IV Year; a laboratory course of about 11 hours per week.

This course of experiments is intended to give the student practice in investigating the elastic and physical properties of iron, steel, concrete, timber and other building materials.

Reference book:—Materials of Construction—Johnson.

18. THEORY OF STRUCTURES:—*C. R. Young.*

Department 1, III Year; 2 hours per week; both terms.

The work of the first term comprises a thorough discussion of restrained, continuous and trussed beams, multiple beam and box girders, plate girders and certain practical aspects of column design. A number of designs of girders and structural details are worked out in the class and drafting rooms.

The second term is given chiefly to the design of a riveted truss highway span and a riveted truss railway span, the complete designs being made in the lecture and drafting rooms.

19. THEORY OF STRUCTURES:—*C. R. Young.*

Departments 2, 3, 4, 6 and 8, III Year; 2 hours per week; first term.

The work is practically the same as that for Department 1 in the first term.

Text books:—Modern Framed Structures—Johnson, Bryan and Turneaure; Theory of Structures—Spofford; Bridge and Structural Design—Thomson; Aids in Structural Design—Young; Carnegie Pocket Companion; Cambria Steel.

20. FOUNDATIONS, RETAINING WALLS AND DAMS:—*P. Gillespie.*

Department 1, IV Year; 1 hour per week; both terms.

This course of lectures is devoted to the design of the structures mentioned. Preparatory to the discussion of the practical aspects of the subjects, and in order to gain familiarity with the fundamental principles involved, a part of the first term is given over to the consideration of the theory of compound stress. The most approved forms of construction of retaining walls, footings, abutments, piers and dams are then described, and typical designs are worked out in the class and drafting rooms.

Text books and books of reference:—Retaining Walls for Earth—M. A. Howe; Walls, Bins and Grain Elevators—M. S. Ketchum; A Treatise on Masonry Construction—I. O. Baker; Design and Construction of Dams—E. Wegmann.

21. CEMENTS AND CONCRETE:—*P. Gillespie.*

Departments 1, 4 and 8, III Year; 1 hour per week; second term.

The manufacture, testing and use of Portland cement and the fundamentals of the theory of reinforced concrete are discussed in this course of lectures.

22. REINFORCED CONCRETE:—*P. Gillespie.*

Departments 1, 3 and 4, IV Year; 1 hour per week.

The theory of the strength of reinforced concrete elements including the beam, the slab, the T-beam and the column, is continued in this course.

The analysis of the monolithic arch by the elastic theory is discussed, and the student is required in the drafting room to apply his knowledge to the design of simple structures.

Reference books:—Principles of Reinforced Concrete Construction—Turneure and Maurer; Concrete, Plain and Reinforced—Taylor and Thompson.

23. IRON AND STEEL:—*T. R. Loudon.*

Taken by students in IV Year, who select the options (c) Structural Engineering, and (e) Strength and Elasticity of Materials.

Metallography—Mechanical Treatment, Heat Treatment; Metallurgy; Physical Properties; 1 lecture per week. Laboratory, second term.

24. MILL BUILDING DESIGN:—*C. R. Young.*

Departments 1 (*Structural Engineering Option*), 3 and 4 (*Architectural Engineering Option*), IV Year; 1 hour per week; both terms.

The structural problems involved in the design of mill buildings of timber, steel and reinforced concrete are discussed in this course of lectures. Consideration is given to the various types of buildings, the conditions governing their choice and the details of construction in different materials. Designs of portions of mill buildings are worked out in the class and drafting rooms.

Text books:—Mill Buildings—Tyrrell; Steel Mill Buildings—Ketchum.

24a. MISCELLANEOUS STRUCTURES:—*C. R. Young.*

Department 1 (*Structural Engineering Option* and *Sanitary and Highway Engineering Option*), IV Year; 1 hour per week, second term.

In this course of lectures the application of theoretical principles to the design of a variety of structures is made. Among those structures discussed are transmission line towers, elevated tanks and their supporting towers, standpipes, large pressure pipes, sewers, culverts, small highway bridges, sub-surface tanks and tall chimneys. Whenever possible the lecture work is followed up by designs in the drafting rooms.

MACHINERY.

25. THEORY OF MECHANISM:—*J. H. Parkin.*

Departments 3 and 7, II Year; Department 8, III Year; 2 hours per week; both terms.

This course of lectures treats of the motions of machines, the latter being assumed to be of sufficient strength to resist acting forces. The formation of machines is dealt with in a general way and the efficiency of machines considered. Investigations of the velocities of points and links are made. The design of gear teeth and the application of trains of gears are taken up, also problems in static equilibrium.

Problems are worked out in the drafting room in which the methods given are employed.

Text book:—Theory of Machines—Angus.

26. MECHANICS OF MACHINERY:—*J. H. Parkin.*

Departments 3 and 7, III Year; 1 hour per week; both terms.

In this course the questions dealt with are the construction of acceleration diagrams, the determination of the accelerations of various parts of machines, the kinetic energy of machines, the effect of the weights and accelerations of parts on the velocity of the fly-wheel and the proper weight of the latter to fulfil given conditions. The theory of various forms of governors is fully taken up and also the efficiency of machines.

Text book:—Theory of Machines—Angus.

27. MACHINE DESIGN—*J. H. Billings.*

Departments 3 and 7, III Year; 2 hours per week; both terms. Department 6, III Year; first term only.

Using the previous work in mechanics and kinematics as a groundwork, the lectures in this course deal with the design of shafting, journal bearings, gearing, flywheels, belting, springs, clutches, ball and roller bearings, machine supports, framing, etc.

The problems worked out in the design room are planned to include the principal parts of some complete machine such as an engine or machine tool.

The design work occupies $7\frac{1}{2}$ hours per week for Department 3, $4\frac{1}{2}$ hours for Department 6 and $3\frac{1}{4}$ hours for Department 7.

28. ADVANCED MACHINE DESIGN—*J. H. Billings.*

Department 3, IV Year; lectures, 1 hour per week; design, 4 hours per week; both terms.

The work of this course gives practice in the design of complete machines from specifications, having regard for durability, safety, cost of materials, and difficulties in casting, machining and assembling. Mechanisms are developed to give required motions and control.

The lectures deal also with compound stress, helical gearing and questions of vibration and stability. Machine tools, automatics and process machinery are discussed as far as time will allow.

28a. MACHINE TOOLS—*J. H. Billings.*

Departments 3, 6 and 7, II Year; 1 hour per week; second term.

A course of lectures dealing with the construction and operation of machine tools and some classes of process machinery. The object of the course is to familiarize the student with the principles of metal removal and acquaint him with a few typical machine tools.

HYDRAULICS.29. HYDRAULICS—GENERAL COURSE:—*J. J. Traill.*

Departments 1, 3 and 7, III Year; 2 hours per week.

This is an introductory course of lectures in hydraulics, and is devoted to the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of discharge by various methods, such as orifices and weirs, the conditions of flow obtaining in open channels, artificial and natural, and in pipes flowing partially full, together with other kindred subjects.

The object of this course is to provide the student with a good working knowledge of the fundamental principle of hydraulics, such as is useful in practical work, and is necessary to the intelligent investigation of more advanced problems, such as the design of turbines, water-wheels and power plants generally.

29a. HYDRAULICS:—*J. J. Traill.*

Departments 2 and 8, III Year; Department 6, IV Year.

This course deals with the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of water by various methods, the conditions of flow in open channels and in pipes partly full. This work is followed by a brief discussion on pumps and other hydraulic machines.

30. HYDRAULIC LABORATORY:—*R. W. Angus, J. J. Traill.*

Department 1, III Year; 3 hours per week; one term. Departments 3 and 7, III Year; 4 periods of 3 hours each.

The work in this course is intended to illustrate the lecture course given in Hydraulics and to give the student some working acquaintance with the formulas met with in practice. Experiments are made to determine the coefficients for an orifice and the coefficients of discharge for a weir. The results of these experiments are used in measuring the discharge in subsequent experiments on meters and for the determination of hydraulic resistances in various cases of flow in pipes.

31. HYDRAULICS:—*J. J. Traill.*

Departments 1, 3 and 7, IV Year; 1 hour per week; both terms.

A discussion of rainfall, evaporation and run-off relations is taken up, followed by a study of the investigation and use of stream flow data. Flow in pipes is taken up, such problems as water-hammer, flow in branched pipes and water-mains discharging along their length being considered. Flow over weirs and steady non-uniform flow in open channels are also studied.

31a. HYDRAULICS:—*R. W. Angus.*

Departments 1, 3 and 7, IV Year; 2 hours per week, both terms.

The most important question considered and to which most of the lectures are devoted is the theory of turbines and centrifugal pumps, the effect of the design on the speed, discharge power and efficiency being fully taken up.

Text books:—Centrifugal Pumps—Loewenstein and Crissey; Hydraulics—Merriman; Water Power Engineering—Mead.

32. HYDRAULICS:—*R. W. Angus, J. J. Traill.*

Departments 1, 3 and 7, IV Year; about 10 hours per week.

A laboratory course devoted to experimental work on turbines of various types and centrifugal and turbine pumps and other similar devices. This experimental work is arranged to illustrate the lectures on turbine and pump design. The experiments are made on two large turbine pumps used in the laboratory supply, as well as on apparatus specially designed for instruction. Various methods of measuring water-power and the efficiency of machines are also given.

32a. POWER:—*J. J. Traill.*

Departments 2, 6 and 8, IV Year; 24 hours.

A laboratory course of experiments on orifices, weirs, turbines, meters, pumps, etc.

32b. HYDRAULICS:—*J. J. Traill.*

Department 1, IV Year.

This is a lecture and laboratory course of six hours per week, first term, dealing with the flow of water in pipes and open channels, measurement of water, and pumps and pumping.

HEAT ENGINES.

33. THERMODYNAMICS:—*R. W. Angus.*

Departments 3, 6 and 7, III Year; 2 hours per week.

A lecture course in which the subject is treated in such a way as to make it of practical value and give a working acquaintance with the principles on which it is based. After the elementary ideas have been given and the proofs of the properties of Carnot's cycle, applications of the subject are made to the perfect gas and to saturated steam and to the various types of engines. Temperatures are taken from the air thermometer.

34. THERMODYNAMICS:—*R. W. Angus.*

Departments 1, 2 and 8, IV Year; 1 hour per week; both terms.

This course is especially designed to give the student a working knowledge of thermodynamics as applied to the perfect gas and steam so that he will be able to understand clearly the action of air compressors, steam engines, etc. After deducing general principles, the efficiency of compressed air transmission and the relative merits of different types of compressors are discussed. The steam engine and boiler are also discussed.

35. THERMODYNAMIC AND MECHANICAL LABORATORY:—*R. W. Angus, L. M. Arkley.*

Department 3, III Year; 2 hours per week, first term; 3 hours per week, second term. Departments 6 and 7, III Year; 2 hours per week, first term; 1½ hours per week, second term.

This laboratory course is designed to assist in a clearer understanding of thermodynamics, machine design and mechanics of machinery. The work in thermodynamics consists in the setting of slide valves, indicating engines measuring the brake horse-power, simple engine and boiler tests and the testing of gas and gasoline engines under various conditions. The mechanical laboratory work deals with the efficiency of belts and ropes as well as of several machines of simple construction. An examination of lubricating oils is also made by means of oil testing machines and other well-known devices. Experiments are also made on the balancing of reciprocating and rotating masses.

36. THERMODYNAMICS:—*R. W. Angus.*

Departments 3 and 7, IV Year; 2 hours per week; both terms.

This is a continuation of the introductory course, the subject being here treated from a general standpoint and the idea of entropy and of the absolute scale of temperatures being introduced. The course includes the treatment of saturated and superheated vapours, gases, the flow of fluids, chimney and boiler efficiency and the theory of various engines and other appliances including air compressors, refrigerating machines, and injectors.

Text book:—*Thermodynamics—Peabody.*

36a. THERMODYNAMICS:—*L. M. Arkley.*

Departments 3 and 7, IV Year; 1 hour per week, both terms.

Steam Power Plants. This course follows in logical order the courses on heat engines given in the second and third years. In it a study of the prime movers and auxiliary apparatus required in a power plant is made in such a manner as to indicate the proper choice of equipment under various conditions of operation.

37. THERMODYNAMICS:—*R. W. Angus, L. M. Arkley, J. H. Parkin.*

Departments 3 and 7, IV Year; about 10 hours per week.

The work in this year is a continuation and extension of the work covered in the third year laboratory course. Careful tests are made of engines of various types, such as simple, tandem and cross-compound steam engines; steam turbines; refrigerating machines; air engines; injectors and steam pumps, etc.; and an application is made of Hirn's analysis and the entropy diagram to the results obtained. A complete set of experiments is made on each machine and the result plotted so as to show clearly to the student the effect of various alterations in the adjustment of the engine on the resulting efficiency.

Several modern gas and gasoline engines and a gas producer give ample opportunity for the study of this type of engine, and facilities are provided for sampling the gas supply and exhaust.

Two experimental stacks and three boilers enable results to be obtained on boiler efficiency and chimney draft.

38. STEAM ENGINES:—*L. M. Arkley.*

Departments 3, 7 and 8, II Year; one hour per week; second term.

This course of lectures includes a discussion of the principles of action of the steam engine; also the theory and design of various simple forms of valve gears used in the operation of such engines.

39. HEAT ENGINES:—*L. M. Arkley.*

Departments 3 and 7, III Year; Department 8, IV Year; one hour per week, both terms.

This course in heat engines is intended for students in Mechanical, Electrical and Metallurgical Engineering, to be supplementary to the general course of lectures in thermodynamics.

The principal commercial forms of heat engines are dealt with in a more or less descriptive manner; special attention is given to considerations affecting the design of the ordinary forms of steam engines, gas engines and oil engines.

39a. POWER:—*R. W. Angus, L. M. Arkley.*

Departments 1, 2 and 8, IV Year; 21 hours.

A course of experiments with steam and gas engines, compressed air, etc.

ARCHITECTURE.

40. HISTORY OF ARCHITECTURE:—*H. H. Madill.*

Department 4, I Year; one hour per week; both terms.

In this course the development of architecture is treated very briefly and in an elementary manner, from the Pyramids of Egypt to the present, laying special emphasis on the Egyptian, Grecian and Western Asiatic work. The antique Greek and Roman orders are studied, and the students are required to make rendered drawings in the studio of certain orders and elements. An attempt is made to develop the student's sense of proportion, and in the latter part of the second term he is required to study a simple problem in design.

41. HISTORY OF ARCHITECTURE:—*H. H. Madill.*

Department 4, II Year; one hour per week; both terms.

The Classical, Early Christian, Byzantine and Romanesque styles of architecture are studied with the aid of the lantern. The student is required to become acquainted with the best examples in these styles in order that his sense of proportion and his taste may be developed and his knowledge of the different elements extended.

42. HISTORY OF ARCHITECTURE:—*A. Wellesley McConnell.*

Department 4, III Year; one hour per week; both terms.

In this course the work of the previous year is continued, with the study of Gothic and the Renaissance.

43. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*

Department 4, II Year; one hour per week; both terms.

In this course the development of Ornament is traced from the beginning through Egyptian, Assyrian, Grecian, Roman, Byzantine, Romanesque and Moresque styles. An attempt is made to analyze ornament of the best periods and to systematize the principles followed in form and color. The development and types of mouldings are also studied.

44. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*

Department 4, III Year; one hour per week; both terms.

A continuation of the course in Ornament given to the Second Year. Instruction is given in lectures with the aid of the stereopticon. The students are required to become familiar with the characteristics and forms of the ornament used in the Gothic and Renaissance styles.

45. ORDERS OF ARCHITECTURE:—*A. Wellesley McConnell.*

Department 4, II Year; one hour per week; both terms.

Lectures on the Five Orders of Architecture, their affiliated forms and the other elements used in design. Simple problems in elementary design involving the use of the orders and other elements are set from time to time.

46. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, II Year; one hour per week; both terms.

This course is given by means of individual instruction in the classroom by criticisms of the solutions of different problems set during the year and by a series of lectures. It is in this course that the student begins the serious study of design; continued practice in architectural drawing and rendering affords the training necessary to make the student a proficient draughtsman.

47. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, III Year.

Theory and practice of Design.

This course is given by individual instruction in the studio and by lectures. The greater part of the course is devoted to problems in design, and forms a continuation of the course given in the preceding year.

48. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, IV Year.

The entire course is devoted to advanced academic training in designing the more monumental classes of buildings. The student is required to design and submit sketches and working drawings of some subject to be selected by himself.

48a. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*

Department 4, IV Year; Architectural Engineering Option.

A short course of lectures and studio work referring especially to the artistic side of the design of commercial buildings.

49. FREEHAND DRAWING AND WATER COLOR PAINTING:—*C. W. Jefferys*.
Department 4, I Year; 2 hours per week; both terms.
Drawing from still life objects. Primary freehand perspective.
Primary pencil and pen and ink rendering.
- 49a. Department 4, II Year; 2 hours per week; both terms.
Drawing and monochrome painting from still life.
Drawing from the cast.
Pencil, pen and ink, and monochrome rendering.
Primary water color.
Drawing from landscape and natural objects.
- 49b. Department 4, III Year; 2 hours per week; both terms.
Drawing from the cast.
Water color from still life. Water color rendering.
Drawing from landscape and natural objects.
Students who are sufficiently advanced are admitted to the Fourth Year Life Drawing Class.
- 49c. Department 4, IV Year; 2 hours per week; both terms.
Water color from still life and from landscape.
Drawing from life.
Water color rendering.
50. MODELLING:—*J. L. Banks*.
Department 4; I Year; 2 hours per week; both terms.
The Orders. Synopsis of styles.
- 50a. Department 4; II Year; 2 hours per week; both terms.
The styles elaborated.
Problems in figures and in relation to architecture.
- 50b. Department 4; III Year; 2 hours per week; both terms.
Styles continued.
Problems, combination of figure, ornament and architecture, and their relative values.
- 50c. Department 4; IV Year; 2 hours per week; both terms.
Modelling from life.
Anatomy.
Composition of groups.
51. STRUCTURAL DESIGN:—*C. R. Young*.
Departments 1 (*Structural Engineering Option*) and 4, IV Year; 1 hour per week; both terms.
This course of lectures is devoted to the problems connected with the structural design of buildings of timber, steel and reinforced concrete. The various structural elements, such as the floors, columns, footings, walls and wind bracing, are fully discussed, and portions of typical buildings are designed in the class and drafting rooms.

Text books:—Architectural Engineering—Freitag; Steel Construction—Tucker; Structural Details—Jacoby; Architects' and Builders' Pocket Book—Kidder.

52. BUILDING MEASUREMENT:—*C. H. C. Wright.*

Department 4, I Year; 1 hour per week; both terms.

In this course of lectures the principles of measurements and mensuration with special reference to buildings will be discussed. With this is combined $4\frac{1}{2}$ hours per week practice in measurements of existing buildings, quantities, etc.

53. BUILDING MATERIALS:—*C. H. C. Wright.*

Department 4, III Year; 2 hours per week; both terms.

The structural and aesthetic value of the various building materials.

54. SANITARY SCIENCE:—*C. H. C. Wright.*

Department 4, IV Year; 1 hour per week; both terms.

Modern plumbing, its design and installation.

54a. HEATING AND VENTILATING:—*C. H. C. Wright.*

Department 4, IV Year; 1 hour per week; both terms.

The design of different systems, where they should be used, heating specifications, etc.

ASTRONOMY AND GEODESY.

55. ASTRONOMY, ELEMENTARY:—*C. A. Chant.*

Department 1, II Year; 1 hour per week; both terms.

A course in descriptive Astronomy, explaining the ordinary astronomical terms, and describing the various celestial bodies and their motions. In the evenings opportunity will be given for identifying the stars and for observing with telescopes.

Text book:—Manual of Astronomy—C. A. Young.

56. ASTRONOMY AND GEODESY:—*L. B. Stewart.*

Department 1, III Year; 2 hours per week.

The course of lectures deals with the determination of time, latitude, longitude and azimuth, by methods adapted to the use of the surveyor's transit and the sextant. It is designed to fulfil the requirements of the final examinations for Ontario and Dominion Land Surveyors.

In Geodesy an account is given of the principles and methods of a secondary triangulation survey, also of the principles involved in the North-West system of survey.

Text books:—Practical Astronomy as applied to Geodesy and Navigation—Doolittle; Nautical Almanac, 1920.

57. FIELD WORK:—*L. B. Stewart, S. R. Crerar.*

Department 1, III Year; about 1 hour per week; first term.

The practical work in this subject comprises observations in the field with the transit and sextant for the determination of time, latitude and azimuth by the methods described in the lectures.

58. ASTRONOMY (Advanced):—*L. B. Stewart.*

Department 1, IV Year; 2 hours per week.

The lecture course in this subject comprises the theory and adjustment of the instruments used in connection with a geodetic survey; the methods of taking and reducing observations for time, longitude, latitude, and azimuth, with the precision required on such a survey; and other matters relating to these subjects.

59. GEODESY AND METROLOGY:—*L. B. Stewart.*

Department 1, IV Year; 2 hours per week.

The lecture course includes a description of the methods of measuring base lines and the angles of a triangulation; the geometry of the spheroid with applications to geodetic problems; the computation of geodetic positions; the solution of large triangles on the earth's surface, and the adjustment of a triangulation; trigonometric and precise spirit levelling; the determination of the figure of the earth by arc measurements, and by the pendulum; the theory of map projections, etc.

60. ASTRONOMY, GEODESY AND METROLOGY:—*L. B. Stewart.*

Department 1, IV Year; about 23 hours per week.

The practical work in the above subjects includes the observation of meridian transits for time and longitude determinations, and of prime vertical transits for latitude, with the astronomical transit instrument; the observation of meridian zenith distances of stars, and of azimuths at elongation for latitude, with the alt-azimuth; theodolite observations for azimuth; observations for latitude with the zenith telescope; the investigation of the constants of the instruments used, and the reduction of all observations; the measurement of a base line with the steel tape and with invar wires, and the determination of the constants of the tape; the measurement of the angles of a triangulation and the adjustment of the angles of network of triangles, etc.

BIOLOGY.

62. ELEMENTARY BIOLOGY:—*E. M. Walker.*

Department 6, I Year; 3 hours per week; each term.

An elementary laboratory course on the nature and identification of plant and animal tissues and products, with microscope practice.

63a. ELEMENTARY BIOLOGY:—*E. M. Walker.*

Department 1, IV Year.

An Elementary Course of Laboratory work and demonstrations in General Biology, six hours per week, first term.

64. BACTERIOLOGY:—*J. G. Fitzgerald.*
Departments 1, 5 and 6, IV Year; a lecture and laboratory course of 8 hours per week, second term, on elementary bacteriology.

BUSINESS.

65. ACCOUNTING:—*W. S. Ferguson.*
All Departments, I Year; 1 hour per week; both terms.
The principles of accounting; illustrated by typical accounts.
66. BANKING AND FINANCE:—*M. A. Mackenzie.*
All Departments, II Year; 1 hour per week; both terms.
Money and the instruments of credit; stocks and bonds.
67. LIMITED COMPANIES:—*A. R. Clute.*
All Departments, III Year; 1 hour per week; both terms.
Partnerships; the history and development of the limited liability company; the Companies Acts; Company finance.
68. CONTRACTS AND SPECIFICATIONS:—*C. R. Young.*
Departments 1 and 4, IV Year; 1 hour per week; second term.
This course of lectures deals with the fundamental principles of contract and specification writing. The critical examination of typical specifications and agreements by the class forms an essential feature of the instruction.

Text books:—Engineering Contracts and Specifications—Johnson: Elements of Specification Writing—Kirby; Specifications and Contracts—Wadell-Wait; Principles of Specification and Agreement Writing—Young.
69. COST-KEEPING, ETC.:—*J. W. Bain, H. W. Price, L. M. Arkley.*
Departments 3, 5, 6 and 7, IV Year.
Works management, mechanical specifications, analysis of costs, reports.
70. COST-KEEPING:—*H. E. T. Haultain, G. A. Guess.*
Departments 2 and 8, IV Year.
Mining and Metallurgical costs and cost keeping methods, ore contracts, smelter settlements, practical problems.

CHEMISTRY.

75. ELEMENTARY CHEMISTRY:—*E. G. R. Ardagh.*
All Departments, I Year; 2 hours per week; both terms.
A lecture course in elementary chemistry dealing with the metals and non-metals, with experimental illustrations.

78. INORGANIC CHEMISTRY:—*L. J. Rogers.*
Department 6, I Year; about 12 hours per week; both terms.
A laboratory course of quantitative experiments illustrating the use of the sensitive balance, and confirming the fundamental laws of chemistry; qualitative inorganic analysis; quantitative analysis of pure salts; inorganic preparations; molar weight determinations.
Text book:—Manual of Chemical Analysis, Qualitative and Quantitative—Newth.
79. INORGANIC CHEMISTRY:—*E. G. R. Ardagh.*
Departments 2, 6 and 8, II Year; 1 hour per week; first term.
A lecture course on the chemistry of the metals; a continuation of Course 75.
80. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Departments 2, 6 and 8, III Year; 1 hour per week: both terms.
A lecture course on the principles of chemical analysis; select gravimetric and volumetric methods; technical analysis.
81. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Departments 1, 2, 3 and 7, II Year; 6 hours per week; one term.
Laboratory practice in elementary qualitative and quantitative analysis.
Text book:—A Smaller Chemical Analysis—Newth.
82. ANALYTICAL CHEMISTRY:—*J. W. Bain.*
Department 2, II Year; 3 hours per week; both terms.
A laboratory course in the gravimetric determination of metals and acids, with elementary volumetric analysis.
Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.
83. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Department 8, II Year; 14 hours per week; 17 weeks.
A laboratory course comprising gravimetric and volumetric methods, acidimetry and alkalimetry.
Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.
84. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Department 6, II Year; 6 hours per week; both terms.
A laboratory course in qualitative and elementary quantitative chemical analysis; inorganic preparations.
Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

85. ENGINEERING CHEMISTRY:—*J. W. Bain.*
 Departments 1, 2, 3, 6, 7 and 8, II Year; 1 hour per week; second term.
 A lecture course consisting of a study of the industrial production and application of heat and light, and of the chemistry of fuel and the products of combustion.

86. INDUSTRIAL CHEMISTRY:—*W. H. Ellis.*
 Department 6, II Year; 1 hour per week; both terms.
 A lecture course on the manufacture of salts, acids, alkalies and inorganic chemicals.
 Text book:—Inorganic Chemistry—Thorp.

87. ORGANIC CHEMISTRY:—*M. C. Boswell.*
 Departments 1, 2, 3 and 7, II Year; 1 hour per week; first term.
 A lecture course in elementary organic chemistry.
 Text book:—Theoretical Organic Chemistry—Cohen.

88. ORGANIC CHEMISTRY:—*M. C. Boswell.*
 Department 6, II Year; 2 hours per week; both terms.
 A lecture course dealing with the aliphatic compounds.
 Text book:—Theoretical Organic Chemistry—Cohen.

90. PHYSICAL CHEMISTRY:—*W. L. Miller.*
 Departments 6 and 8, II Year; 2 hours per week; both terms.
 A course of lectures on the elements of chemical mechanics, and the theory of solutions.

91. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
 Department 5, III Year; 19 hours per week; 16 weeks.
 A laboratory course on the technical analysis of iron and steel alloys, ores, furnace products, ceramic materials, foods, gases, fuels, etc.

92. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
 Department 6, III Year; 11 hours per week, first term; 13 hours per week, second term.
 A laboratory course in volumetric and technical analysis.

93. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
 Departments 2 and 8, III Year; 5 hours per week; both terms.
 A laboratory course on the technical analysis of ores and furnace products.

94. ENGINEERING CHEMISTRY:—*E. G. R. Ardagh.*
 Departments 1, 2, 3, 5, 6 and 7, III Year; 1 hour per week; both terms.
 A lecture course on the application of chemistry to engineering problems; air, water, sewage, the materials of construction, explosives, etc.

95. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*
 Departments 5 and 6, III Year; 1 hour per week; both terms.
 A lecture course on petroleum and its products, coal tar and its products, the destructive distillation of wood; fats, oils, soap, sugar, starch, and gums; fermentation industries, etc.
 Text book:—Industrial Chemistry—Thorp.

96. CHEMICAL PLANT:—*J. W. Bain.*
 Departments 5 and 6, III Year; 1 hour per week; both terms.
 A lecture course on the machinery and plant used in chemical manufacturing.

97. ORGANIC CHEMISTRY (A):—*M. C. Boswell.*
 Departments 5 and 6, III Year; 2 hours per week; both terms.
 A lecture course on the aromatic series.
 Text book:—Theoretical Organic Chemistry—Cohen.

98. ORGANIC CHEMISTRY (B):—*F. B. Allan.*
 Departments 5 and 6, III Year; 1 hour per week; second term.
 A lecture course on stereoisomerism, desmotropism, etc.

99. ORGANIC CHEMISTRY:—*M. C. Boswell.*
 Department 5, III Year; 19 hours per week; 8 weeks.
 A laboratory course in organic preparations in the aromatic series; organic analysis.

100. ORGANIC CHEMISTRY:—*M. C. Boswell.*
 Department 6, III Year; 17 hours per week; 4 weeks.
 A laboratory course in organic preparations.

101. ELECTROCHEMISTRY:—*W. L. Miller.*
 Departments 5, 6, 7 and 8, III Year; Department 2, IV Year; 2 hours per week; first term.
 A lecture course on elementary electrochemistry, illustrated by experiments.

102. ELECTROCHEMISTRY:—*W. L. Miller and J. T. Burt-Gerrans.*
 Departments 5, 6, 7 and 8, III Year; 3 hours per week; first term.
 A laboratory course in quantitative measurements to accompany Course 101.

103. INORGANIC CHEMISTRY:—*J. W. Bain.*
 Departments 5 and 6, IV Year; 1 hour per week; first term; 2 hours per week; second term.
 A lecture course on chemical theory.

104. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on advanced organic chemistry.
105. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, IV Year.
A laboratory course in advanced organic chemistry.
106. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on selected subjects in chemical technology.
107. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, IV Year; about 28 hours per week; both terms.
A laboratory course in industrial problems.
108. ELECTROCHEMISTRY:—*J. T. Burt-Gerrans.*
Departments 5, 6 and 7, IV Year; 2 hours per week; both terms.
An advanced lecture course on the theory of solutions and electrolysis, and the application to the practice of electro-deposition and electrolytic refining of metals. The course also includes lectures on the electric furnace with special consideration of efficiency.
Text books:—Electrometallurgy—Borchers; Electrochemistry—Le Blanc; Electrochemistry—Luepke.
109. ELECTROCHEMISTRY:—*W. L. Miller and J. T. Burt-Gerrans.*
Departments 5, 6 and 7, IV Year; about 28 hours per week.
A laboratory course accompanying Course 108.
110. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on the composition and examination of air, water and food; poisons and their detection.
111. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, IV Year.
A laboratory course accompanying Course 110.
112. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Department 2, IV Year, 12 hours per week; first term.
A laboratory course comprising analysis of ores and furnace products.
113. SANITARY CHEMISTRY:—*H. M. Lancaster, E. G. R. Ardagh.*
Department 1, IV Year.
A lecture and laboratory course of about 16 hours per week for one term on water supply, sewage disposal, ventilation, etc.

DESCRIPTIVE GEOMETRY AND DRAWING.

115. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Departments 1, 2, 3, 6, 7 and 8, I Year; 1 hour per week; both terms.
This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solutions of problems relating to straight lines and planes.

116. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 4, I Year; 1 hour per week; both terms.
This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solution of problems relating to straight lines and planes, special reference being made to the determination of shades and shadows.

117. DRAWING:—*J. R. Cockburn.*

Departments 1, 2, 3, 6, 7 and 8, I Year; about 16 hours per week.
Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; the plotting of original surveys; measured drawings.

118. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell.*

Department 4, I Year; about 15 hours per week.
Copying from the flat, lettering, topography, freehand drawing in black and white, both from copies and models; the graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings. Elements and principles of Architecture.

121. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Departments 1, 2, 3, 7 and 8, II Year; 1 hour per week; both terms.
This course of lectures is a continuation of the work taken in the first year with the following additions: Problems relating to curved surfaces, principles of shades, shadows and perspective.

122. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 4, II Year; 1 hour per week; both terms.
This course of lectures is a continuation of the work taken in the First Year with the addition of problems relating to curved surfaces, shades, shadows and perspective.

123. DRAWING:—*J. R. Cockburn.*

Departments 1 and 2, II Year. Department 1, about 14 hours per week. Department 2, about 7 hours per week; both terms.
Coloring and shading as applied to both topographical and construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

124. DRAWING:—*J. R. Cockburn.*

Departments 3 and 7, II Year; about 15 hours per week; both terms.
Coloring and shading as applied to construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics, theory of mechanism and strength of materials; measured drawings; elementary design.

125. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell.*

Department 4, II Year; about 18 hours per week; both terms.

Freehand drawing including monochrome and colors; exercises from the orders of architecture; principles of shades, shadows and perspective; elementary architectural design; problems in descriptive geometry relating to solids bound by curved surfaces; solution of problems in optics and strength of materials; measured drawings.

126. DRAWING:—*J. R. Cockburn.*

Department 6, II Year.

Same as Department 3, with exception that theory of mechanism is not included.

127. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 1, III Year; 1 hour per week; first term.

This course of lectures deals with spherical projections, the principles of mapmaking, and the graphical solution of spherical triangles.

128. DRAWING:—*J. R. Cockburn, C. R. Young.*

Department 1, III Year; about 12 hours per week.

Principles of mapmaking, spherical projection, plotting of original surveys relating to topographical and railway work; problems in theory of construction; original design of various structures; measured drawings.

129. DRAWING:—*J. R. Cockburn.*

Department 2, III Year; $4\frac{1}{2}$ hours per week.

Plotting of original surveys, relating to topographical and railway work and mining; problems in theory of construction; original design; measured drawings.

130. DRAWING:—*J. R. Cockburn, C. R. Young, A. Wellesley McConnell.*

Department 4, III Year; about 16 hours per week, first term; 22 hours per week, second term.

Advanced work in monochrome and colors; problems in shades, shadows and perspective; architectural design; problems in theory of construction, including framed structures.

131. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 4, III Year; 1 hour per week; first term.
Advanced work in shades, shadows and perspective.

132. DRAWING:—*J. R. Cockburn, C. R. Young.*

Departments 2, 3 and 6, III Year; 3 hours per week; both terms.
Problems in design dealing with the theory of structures.

ELECTRICITY.

135. MAGNETISM AND ELECTRICITY:—*H. W. Price.*

Departments 1, 2, 3, 6, 7 and 8, I Year; 2 hours per week; first term.

A course of lectures on general principles relating to magnetism, electricity, electromagnetism, electrostatics, etc., illustrated largely from engineering apparatus.

136. ELECTRIC CIRCUITS:—*W. S. Guest.*

Departments 1, 2, 3, 6, 7 and 8, I Year; 2 hours per week; second term.

This course of lectures concerns chiefly fundamental principles relating to electric circuits, and leads to consideration of such problems as the distribution of electric energy through lines and networks and the division of load between generators.

138. ELECTRICITY:—*T. R. Rosebrugh.*

Departments 3, 6 and 7, II Year; 2 hours per week; both terms

Deals with the theory of electrical measurements, and detailed study of various methods applicable under different conditions in engineering practice to the measurement of resistance, current, potential difference, power and energy; calibration of commercial measuring instruments. The effect of choice of conditions of measurement on the accuracy of the result is considered.

139. ELECTRICAL LABORATORY:—*W. S. Guest.*

Departments 3, 6 and 7, II Year; 2½ hours per week; both terms.

This laboratory course is closely associated with the lecture course 138 on electricity for the second year. The more important and useful methods of testing generators and circuits for electromotive force, resistance, current, grounds, etc., are practised, often under conditions such as occur in practice. The work also includes methods of calibration of measuring instruments for voltage, current, power and energy, and certain studies of properties of incandescent lamps.

140. ELECTRICITY:—*H. W. Price.*

Department 8, II Year; 1 hour per week; second term; Departments 5 and 6, III Year; 1 hour per week; second term; Department 2, III Year; Departments 1 and 4, IV Year; 1 hour per week.

A course designed to fit the requirements of non-electrical students. A study of essential principles is followed by discussion of electrical apparatus plants, power transmission, railways, etc.

141. POWER:—*H. W. Price.*

Departments 2, 6 and 8, IV Year; 24 hours.

Under the name "Power" a number of operating experiments are arranged to afford some familiarity with measuring instruments and direct and alternating current machinery.

142. MAGNETISM AND ELECTRICITY:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 2 hours per week; both terms.

A course of lectures on theory of magnetism and magnetic circuits, theory of direct current generators, motors, etc.

143. ALTERNATING CURRENT:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 1 hour per week.

A first course of lectures on alternating current, covering principles of measurement and leading to the analytical and graphical treatment of the simpler problems relative to alternating current circuits and machinery.

144. ELECTRICAL LABORATORY:—*T. R. Rosebrugh, H. W. Price.*

Department 3, III Year; 4½ hours per week; Department 7, III Year; 6 hours per week.

This laboratory course is intended to afford the student an opportunity to become familiar with principles involved in continuous current shunt, series and compound wound generators and motors, and, to some extent, alternating current circuits and machinery. Other sections of the work deal with the magnetic properties of iron and steel, and study of iron losses in transformers and generators.

The course is arranged to stand in close relation to the lecture courses in the subjects of magnetism and electricity and alternating current (142, 143) for III Year, and to certain design work (145).

145. ELECTRICAL DESIGN:—*H. W. Price.*

Department 7, III Year; 1 hour per week.

A course of lectures dealing with design of electric machinery and plants, accompanied by designs to be worked out in the design room.

146. ELECTRICAL DESIGN:—*H. W. Price.*

Department 7, III Year.

A design room is set apart for working out designs of electrical apparatus such as transformers, generators, motors, auxiliary apparatus, etc.

Special forms and notes are employed, arranged to suit the various studies. Certain models are provided to assist where necessary.

147. APPLIED ELECTRICITY;—*T. R. Rosebrugh.*

Department 7, IV Year.

This course deals by analytical and vector methods with the theory of alternating current circuits and machinery. Applications of theory are considered with regard to transformers, single and polyphase generators, synchronous motors and rotary converters, induction and commutating series motors, transmission lines, wave analysis, etc.

148. ELECTRICAL LABORATORY;—*T. R. Rosebrugh, H. W. Price.*

Department 7, IV Year, in connection with 147.

This laboratory course involves a thorough study of principles and properties of single and polyphase circuits and apparatus. Both vector and analytical methods are applied to the solution of problems based on tests made on laboratory machines.

The work deals mainly with constant voltage and constant current transformers, single and polyphase alternators, synchronous motors, rotary converters, induction and single phase commutating motors, transmission line, etc. The work does not consist only of factory tests, but is designed to lead the student to apply theory to practice as illustrated in the apparatus under test, with a view to an exact understanding of methods and an appreciation of limitations under many conditions. Free use is made of the oscillograph as a necessary device for "seeing" conditions under investigation. The best commercial measuring instruments are available.

GEOLOGY.

150. GEOLOGY (Elementary):—*W. A. Parks.*

Department 2, II Year; Department 1, III Year; 1 hour per week; both terms.

This course deals chiefly with historical geology with special reference to Canadian formations.

Reference books:—Introduction to Geology—Scott; Text Book of Geology—Dana.

151. ECONOMIC GEOLOGY. (Including Dynamical and Structural Geology):—*A. P. Coleman.*

Departments 2 and 5, III Year; 1 hour per week; first term; 2 hours per week; second term. Department 1, IV Year; 1 hour per week; both terms.

A study of the more important economic rocks, minerals and ores with their geological associations. Special attention paid to Canadian deposits.

152. ADVANCED GEOLOGY:—*A. P. Coleman.*

Department 2, IV Year; 2 hours per week; both terms.

- (A) *Pre-Cambrian Geology*.—An account of the Keewatin, Huronian and Laurentian rocks of Canada, with their distribution, structural relations and economic features, and briefer accounts of similar formations in the United States and elsewhere.

Works of Reference:—Reports of the United States and Canadian Geological Surveys, of the Bureau of Mines of Ontario, etc.

- (B) *Pleistocene Geology*.—Lectures on the formation and distribution of the drift deposits of North America, with brief references to other regions. Glacial, Interglacial and Postglacial beds are described, changes of climate are discussed with their probable causes, and the economic features of the clays, sands and gravels are pointed out. A weekly excursion is made during October and November to points of interest near Toronto, which is the centre of the most important development of Pleistocene in America.

- (C) *Physiography*.—A course of lectures on the surface forms of the earth, with the geological factors which have produced them. The broad features of the earth, its plains, tablelands, hills, valleys, mountains, oceans, rivers and lakes are discussed in a general way, methods of topographical surveys and mapping are referred to, and the chief physiographic areas of Canada are described.

153. MINING GEOLOGY:—*A. P. Coleman.*

Department 2, IV Year; 1 hour per week; both terms.

A course of lectures on geological problems associated with mining, typical mining regions in Canada, the United States and elsewhere being discussed from the geological side.

Works of reference:—Mineral Industry and the books mentioned under (A).

154. GEOLOGICAL EXCURSIONS:—*A. P. Coleman.*

Department 2, IV Year.

Trips to points of interest in the vicinity of Toronto.

155. ORE DEPOSITS:—*A. P. Coleman.*

Department 2, III Year; 1 hour per week; both terms.

Discussion of the origin and classification of ore deposits in a general way, the mode of occurrence of the chief metals, and statistics of production, special attention being given to the metals mined in Canada.

156. ECONOMIC GEOLOGY:—*Alex. MacLean.*

Department 2, III Year; 2 hours per week; second term.

Laboratory work on ores, manner of occurrence, vein structure, etc.
Geological maps of typical mining regions.

MINERALOGY.

157. ELEMENTARY MINERALOGY:—*J. E. Thomson.*

Department 2, II Year; 2 lectures per week; first term.

After introducing the student to the chief chemical, physical and crystallographic characteristics of minerals, the course becomes descriptive and deals with about one hundred of the minerals most important from the industrial or scientific point of view.

Text books:—Minerals and how to study them—Dana; Text Book of Mineralogy—Dana.

158. MINERALOGY:—*J. E. Thomson.*

Department 6, I Year; 3 hours per week, second term. Department 8, I year; 1 hour per week; first term.

Introduction to blow-pipe analysis, determination of minerals by inspection and physical tests.

Text books:—Text Book of Mineralogy—Dana; Determinative Mineralogy—Lewis.

159. PRIMARY MINERALOGY:—*A. L. Parsons.*

Department 1, II Year; 2 hours per week; first term.

A very brief introduction to the study of minerals and rocks.

Text books:—Minerals and how to study them—Dana; Handbook of Rocks—Kemp.

160. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 2, II Year; 1 hour per week, first term; 3 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; introduction to blow-pipe practice.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy—Lewis.

161. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 1, II Year; 1 hour per week, first term; 2 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; study of common rock types and their identification.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

163. ELEMENTARY PETROGRAPHY:—*T. L. Walker.*

Department 2, III Year; 1 hour per week.

A course of lectures and laboratory work introducing the student to the macroscopic study of rocks.

Text books:—Handbook of Rocks—Kemp; Rocks and rock minerals—Pirsson.

164. MINERALOGY:—*J. E. Thomson.*

Department 2, III Year; 2 hours per week.

Determination of minerals by means of the blow-pipe and physical properties.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy—Lewis.

165. GENERAL PETROGRAPHY:—*T. L. Walker.*

Department 2, IV Year. 1 hour per week.

Study of the chief rock-forming minerals and of some phases of petrography not covered in the course of the previous year.

166. PETROGRAPHY:—*T. L. Walker.*

Department 2, IV Year; 2 hours per week; both terms.

Study of the chief rock-forming minerals, of rocks in thin sections and in hand specimens.

Text books:—Rocks and Rock Minerals—Pirsson; Minerals in Rock Sections—Luquer.

167. CRYSTALLOGRAPHY:—*A. L. Parsons.*

Department 5, III Year; 1 hour per week.

A course devoted to lectures and practical work on the geometrical and optical properties of crystals, preparing the student for the study of rocks in thin sections and for the examination of crystallized substances, natural and artificial, under the polarizing microscope.

169. MINERALOGY:—*A. L. Parsons.*

Department 8, II Year; 1 hour per week.

Determination of minerals by physical properties.

Text Book:—Mineral Tables—Eakle.

MINING, ASSAYING AND ORE DRESSING.

170. MINING:—*H. E. T. Haultain.*

Department 2, II Year; 1 hour per week; first term. Department 8, II Year; 1 hour per week; both terms.

An introduction to the study of mining and ore dressing methods.

171. MINING AND ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, II Year; 3 hours per week; first term.
Introductory work with rock-drills and various ore dressing appliances.
172. MINING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, III Year; 2 hours' lectures per week, second term; 3 hours' laboratory work per week, second term.
General mining methods.
173. ASSAYING:—*H. E. T. Haultain, J. T. King.*
Departments 2 and 8, III Year; 1 hour lecture per week, first term; 3 hours' laboratory work per week, both terms; Departments 5 and 6, III Year; 1½ hours' laboratory work per week; both terms.
Assaying of various ores for gold, silver, lead and copper.
174. ASSAYING:—*H. E. T. Haultain, J. T. King.*
Departments 2 and 8, IV Year; 1 hour lecture per week, one term; 3 hours laboratory work per week, one term.
Continuation of the work of III Year.
175. MINING:—*H. E. T. Haultain.*
Department 2, IV Year; 1 hour lecture per week; both terms.
Special mining methods, examinations, reports.
176. MILLING:—*H. E. T. Haultain, F. C. Dyer.*
Department 2, IV Year; 3 hours' laboratory work per week; both terms.
Advanced work with ore dressing appliances, complete mill tests.
177. ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, III Year; 1 hour per week; both terms.
179. ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Department 2, IV Year; 1 hour per week; both terms.

METALLURGY.

180. METALLURGY:—*G. A. Guess.*
Departments 2, 5 and 6, IV Year; 1 hour per week; both terms.
Advanced studies in the metallurgy of gold, silver, copper, lead, nickel, and zinc, metallurgical problems.
181. FERRO-METALLURGY:—*T. R. Loudon.*
Departments 1, 2, 3, 5, 6, 7 and 8, III Year; 1 hour per week; both terms.
The physical properties of iron and steel and the circumstances that influence the strength, etc., of iron. The different modes of manufacture of iron and steel and the effect of different processes of making on the resulting products; explanations of specifications for iron and steel adopted by engineers.

182. METALLURGY:—*G. A. Guess.*

Department 2, IV Year; 6 hours' laboratory work per week; second term.

Calibration of pyrometers, blast furnace smelting and copper converting, cyanidation, acid leaching of copper ores, electrolytic refining of lead and copper, electrometallurgy.

183. METALLURGY:—*G. A. Guess.*

Departments 2, 6 and 8, II Year; 1 hour per week; second term.

An introduction to the study of general metallurgy.

184. METALLURGY:—*G. A. Guess.*

Departments 2, 5 and 6, III Year; 1 hour per week; both terms.

General metallurgy.

185. METALLURGY:—*G. A. Guess.*

Department 8, II Year; 1 hour per week, both terms.

A lecture course in the study of metallurgical fuels, their use, preparation, calorific value and temperature of combustion, introduction to the study of metallurgical processes. Problems.

Two hours' laboratory work, second term.

186. METALLURGY:—*G. A. Guess.*

Department 8, III Year; 1 hour per week; first term; 4 hours per week; second term.

The uses, properties and metallurgy of the metals except iron, with special reference to copper, nickel, lead and zinc. The study of clays and their industrial uses. An additional laboratory course of 100 hours.

186a. METALLURGY:—*G. A. Guess.*

Department 8, IV Year; 2 hours per week, both terms, and 9 hours' laboratory work, both terms.

Lixiviation of copper ores, design and organization of plants, metallurgical book-keeping, metallurgical balance sheets, thermal balance sheets, electrometallurgy, electrolytic refining processes, a particular study of Canadian problems.

MATHEMATICS.

187. ALGEBRA:—*A. T. DeLury.*

Departments 1, 2, 3, 6, 7, 8, I Year; 2 hours per week; both terms.

Simple equations of one, two and three unknown quantities; quadratic equations of one and two unknown quantities; graphic representation of functions and the introduction of the gradient function; proportion and progressions; interest forms and annuities, permutations, combinations, limits, the general theory of infinite series, binomial theorem, exponential and logarithmic series.

Text book:—Intermediate Algebra—DeLury.

188. ANALYTICAL GEOMETRY:—*I. R. Pounder.*

All Departments, I Year; 1 hour per week first term; 2 hours per week second term.

The course in Elementary Analytical Geometry covers the more familiar propositions in connection with the straight line, circle, parabola, ellipse and hyperbola. The subject is treated so as to illustrate the general methods of analytical geometry.

189. TRIGONOMETRY, PLANE:—*M. A. Mackenzie.*

Departments 1, 2, 3, 6, 7, 8, I Year; 2 hours per week; first term.

Solutions of triangles and practical problems.

Text book:—Practical Trigonometry—Plane and Fawdry.

190. CALCULUS, DIFFERENTIAL AND INTEGRAL:—*S. Beatty.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; 2 hours per week; both terms.

This is an elementary course in the infinitesimal calculus, but adequate to afford a knowledge of the character and methods of the subject and to enable students in chemistry, engineering, etc., to understand such of their text books as introduce the calculus.

191. TRIGONOMETRY, SPHERICAL:—*L. B. Stewart.*

Department 1, II Year; 1 hour per week; first term.

A course of lectures includes the derivation of formulæ and their application to the solution of triangles and to practical problems.

Text book:—Spherical Trigonometry—Todhunter and Leatham.

192. LEAST SQUARES, METHOD OF:—*L. B. Stewart.*

Department 1, III Year; 1 hour per week; first term.

The course of lectures includes: The general principles of probability, the law of error, direct measurements of equal and different weights; mean square and probable errors; indirect measurements; conditioned observations; applications to empirical constants and formulæ, etc.

Text book:—Least Squares—Merriman.

ENGINEERING PROBLEMS.

193. Departments 1, 2, 3, 6, 7, 8, I Year; 1 hour per week; both terms.

In this course the time is devoted to problem work involving an application of the theory and principles laid down in the lecture course of the various subjects of the First Year.

TECHNICAL PHYSICS.

195. ACOUSTICS:—*G. R. Anderson.*

Department 4, III Year.

Wave motion, propagation, reflection and transmission of sounds.

Laws of vibrating strings, pipes and forks. Velocity of sound.

Musical scales. Absorption of sound by various substances, use of deadening material in buildings. Amount of reverberation permissible and desirable in public buildings. Lectures and laboratory work.

196. HYDROSTATICS:—*G. R. Anderson.*

All Departments, II Year.

Laws of fluid pressure and application to machines. Density of solids and fluids, theory of flotation.

Lectures and laboratory work. Spring term.

197. OPTICS:—*G. R. Anderson.*

Departments 1, 2, 3, 6 and 7, II Year.

Rectilinear propagation of light, illumination, photometry, light standards. Distribution of light by reflectors and diffusers, general and selective absorption, economic values of artificial lights.

Laws of reflection and refraction, theory of optical instruments.

Light considered as wave motion, dispersion, spectrum analysis, colour phenomena, polarization.

Lectures and laboratory work, both terms.

197(a). OPTICS AND LIGHTING:—*G. R. Anderson.*

Dept. 4, II Year.

198. HEAT:—*G. R. Anderson.*

Departments 1, 5 and 8, III Year.

Generation and propagation of heat. General and industrial thermometry, calorimetry and pyrometry. Linear and cubical expansion, gas laws. Specific heat of solids, liquids and gases, latent heat of fusion and vaporization. Mechanical equivalent of heat. Carnot cycle.

Lectures and laboratory work, Fall term.

199. PHOTOGRAPHY:—*G. R. Anderson.*

Departments 1 and 4, III Year; Departments 3 and 7, IV Year.

The camera and its adjustments, lenses, shutters, screens. Plates for various purposes, films, prevention of halation. Lighting, exposure, development. Paper of various kinds, printing, enlargement and reduction, blue printing and allied processes. Record photography, photogrammetry and photo-surveying. Photography in colour.

Lectures Fall term, and laboratory work both terms.

200. ILLUMINATION:—*G. R. Anderson.*

Department 4, II Year.

Principles of interior and street illumination. Artificial lighting of public and private buildings, etc.

SURVEYING.

205. SURVEYING:—*S. R. Crerar.*

Departments 1, 2, 3, 7 and 8, I Year; 1 hour per week; both terms.

The lecture course includes the general principles; surveying with the chain, the compass and chain and the transit and chain, and level, the applications of trigonometry to inaccessible heights and distances; mensuration of surfaces, co-ordinate surveying, division of land, etc.

Text books:—Plane Surveying—Tracy; Theory and Practice of Surveying—Johnson and Smith.

206. FIELD WORK:—*S. R. Crerar, E. W. Banting.*

Departments 1, 2, 3, 7 and 8, I Year; 9 hours per week; first term.

This course comprises testing chains; practice in chaining; a complete survey of a piece of land with the chain and transit; keeping of field notes; the use of the transit and compass in surveying closed figures and traverse lines and in ranging straight lines; plotting by latitudes and departures, and otherwise computing areas. Instrumental work with level.

207. SURVEYING:—*W. M. Treadgold, E. W. Banting.*

Departments 1 and 2, II Year; 1 hour per week; both terms.

This course of lectures takes up in detail, simple, reverse and compound curves as applied to railroad surveying. It also includes stadia, plane table and photographic surveying as applied to topographic work, and the main features of mine and hydrographic surveying.

Text books:—Henck, Searles, Allen (Field books for Engineers) Theory and Practice of Surveying—Johnson and Smith; Surveying—Breed and Hosmer.

208. FIELD WORK:—*W. M. Treadgold, E. W. Banting, S. R. Crerar.*

Departments 1 and 2, II Year; 9 hours per week; first term.

This course of instruction embraces all adjustments of the transit, minor problems in triangulation and traversing—ordinary and special problems as applied to railroad work in regard to curves, simple, reverse and compound, profile levelling and plotting of profile.

209. SURVEYING AND LEVELLING:—*W. M. Treadgold, E. W. Banting.*

Department 1, III Year; 1 hour per week; both terms; Department 2, III Year; 1 hour per week; first term.

This course of lectures takes up the work of the railroad engineer on construction, including profiles, cross sectioning, computation of volume of earthwork, overhaul, transition curves, laying out turnouts, frogs and switches, etc.

Also a discussion of trigonometric and barometric levelling.

Text books:—Field Engineering—Searles; Railroad Curves and Earthworks—Allen.

210. FIELD WORK:—*W. M. Treadgold, E. W. Banting, S. R. Crerar.*

Departments 1 and 2, III Year; about 9 hours per week; first term.

This includes adjustments of levels and determination of profile, cross sectioning and computation of earthwork of located line on ground and plotting of same; also cross sectioning by use of hand level. A complete stadia topographic survey is made and plotted. Micrometer work and plane table traverse are also taken up.

ADDITIONAL, FOURTH YEAR OPTIONS.

211. RAILWAY ENGINEERING:—*W. M. Treadgold.*

Department 1, IV Year; about 2 hours per week.

The object of this course is to make the student acquainted with the general principles of railroad and street railway engineering, and the subject will be studied from the standpoint of economic theory of location; train resistance; effect of grade, distance and curvature and rise and fall; maintenance of way; yards and terminals; tunnels, and street railway practice.

212. FIELD WORK:—*W. M. Treadgold.*

Department 1, IV Year; about 11 hours per week; first term.

The work consists of an original survey for a railroad some one or two miles in length, the work being conducted according to the most modern methods of location. Upon the completion of this work a contour map of the district surveyed is plotted in the drafting room and a line adjusted to it. This is staked out in the field, profiles taken and complete estimates of the cost of construction made.

213. SANITARY ENGINEERING.

Sanitary Chemistry (113).

Advanced Biology (63a).

Bacteriology (64).

Re-inforced Concrete (22).

Hydraulics (32b).

Miscellaneous Structures (24a).

Sanitary Engineering:—A lecture course of 1 hour per week, both terms, in which consideration is given to the problems of water supply and sewage disposal as viewed by the engineer. Some practice in the design of works from assumed data is afforded.

Reference books:—*Sewage Disposal*—Fuller; *Public Water Supplies*—Turneaure & Russell.

214. HIGHWAY ENGINEERING:—

Department 1, IV Year.

A lecture and laboratory course of about 8 hours per week, dealing with materials, design and construction of highways and pavements and the testing of various materials used in such work.

215. STRUCTURAL ENGINEERING:—

Students in Civil Engineering who desire to specialize in the subjects best fitting them for designing or constructing engineers on bridge-building or other analogous work, may do so by selecting the Structural Engineering Option in the fourth year. In addition to the obligatory subjects, the following lecture and laboratory courses are provided for those selecting this option:

Theory of Structures (16).
Strength and Elasticity of Materials (17)
Iron and Steel (23).
Reinforced Concrete (22).
Structural Design (51).
Mill Building Design (24).
Miscellaneous Structures (24a).

216. ARCHITECTURAL ENGINEERING:—

Architectural students desiring to give special attention to the structural design of buildings may do so by electing to take the Architectural Engineering Option in the fourth year. The following subjects, in addition to those required of all students in the fourth year in Architecture, are required:

Mill Building Design (24).
Architectural Design (48a).

MODERN LANGUAGES.

217. FRENCH:—*J. S. Will, H. S. McKellar.*

Required in Department 4, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

218. GERMAN:—*G. H. Needler.*

Required in Department 6, all years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

THESIS.

219. THESIS.

Required in all Departments, IV Year.

Each student is required to prepare a thesis of between six thousand and seven thousand words on a subject approved by Council. See circular of information.

VACATION WORK.

220. CONSTRUCTION NOTES. See special circular of information.

OUTLINE OF VACATION WORK**CONSTRUCTION NOTES.****II and III Years.**

The construction notes required consist of neat and complete dimensioned sketches in pencil of any structures, machines or plants which may be of interest. Any object chosen should be represented and dimensioned in such a manner that it could be completely constructed from the notes as the only available information.

From students in Department 2, who have been actually engaged during the summer with Government or other approved geological survey parties, geological field notes will be accepted in lieu of construction notes.

MASTER OF APPLIED SCIENCE DEGREE.

1. A candidate for the degree of Master of Applied Science (M.A.Sc.) shall hold the degree of Bachelor of Applied Science (B.A.Sc.) of this University.
2. He shall spend not less than one academic year in attendance as a student, in the Faculty of Applied Science, on a course of study approved by the Council.
3. He shall present a satisfactory thesis on a subject approved by the Council.
4. He shall pass such examinations as the Council may decide.
5. The candidate must register at the beginning of the academic year.

PROFESSIONAL DEGREES.

The attention of graduates is directed to the following regulations respecting professional degrees.

The following degrees have been established: Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem.E.), subject to the following regulations:

1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science or of the Faculty of Applied Science and Engineering or the degree of Bachelor of Applied Science.
2. He shall have spent at least three years after receiving the diploma or the degree in the actual practice of the branch of engineering wherein he is a candidate for a degree.
3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.

4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidate's professional experience for the purpose of clauses 2 and 3.

The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree, the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.

The candidate may be required at the option of the Examiners to undergo an examination in the subject of this thesis.

6. Notice in writing shall be sent to the Secretary not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Examiners.
7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Secretary not later than the first day of April.
8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Examiners.
9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.
10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the University.

LABORATORY EQUIPMENT.

THERMODYNAMIC AND MECHANICAL LABORATORY.

The University in 1909 completed the erection of a large, well-equipped building for the accommodation of the steam, gas, mechanical and hydraulic laboratories. A more complete description of the laboratories has been published elsewhere, so that the present description is only intended to give the main features.

The part of the building set apart for thermodynamics and other mechanical work is the ground floor of a room 60 ft. x 155 ft. This room is lighted entirely from the roof in a very perfect way. A part of the space 40 ft. wide running the entire length of 155 feet is served by a 3-ton travelling crane and contains the following equipment:

50 h.p. Brown engine with separate jackets on both heads and barrel of cylinder.

Two-stage Rand air compressor having compound steam cylinders, each fitted with Meyer cut-off gear. The low pressure air cylinder has Corliss inlet gear.

30 h.p. high-speed Leonard tandem compound engine with shaft governor.

15 h.p. high-speed McEwen engine.

75 h.p. two-line compound Willans engine.

15 h.p. DeLaval turbine with special nozzles for condensing and non-condensing tests.

Two 15 h.p. Leonard engines with different types of valves, which are used for valve setting.

There are also two surface condensers with air pumps so arranged that any engine in the laboratory may be made to exhaust into the atmosphere through an open heater or into one of the condensers, the change from one arrangement to the other being accomplished in a few minutes without the aid of valves.

The laboratory further contains:

A 3-ton York refrigerating machine with tanks.

An Amsler transmission dynamometer.

Apparatus for testing injectors and steam pumps.

Numerous other pieces of apparatus and instruments.

The work on internal combustion engines and producers is performed on the following:

18 h.p. Canada suction gas producer.

14 h.p. National gas engine arranged for various compressions and points of ignition.

10 h.p. Fielding and Platt engine for city gas or coal oil, having various adjustments.

8 h.p. Otto gas engine.

6 h.p. marine gasoline engine.

Ericsson air engine.

Various accessories to above machines.

Steam for the laboratory is supplied by two 50 h.p. and one 100 h.p. Babcock and Wilcox boilers, the latter having an internal superheater. These boilers are located in a separate boiler room. They are used for experimental work only and are fitted up for testing. The gases pass up through two independent chimneys, and these have been arranged so that the draft and other conditions in the chimney at any point of its height may be examined.

In smaller work-rooms off the main laboratory are placed belt and oil testing machines, apparatus for testing the efficiency of gears and machines, and for experiments in the balancing of machinery.

HYDRAULIC LABORATORY.

The hydraulic laboratory occupies two floors each 40 feet x 112 feet, which are well lighted by large windows on the side and end.

The water for the experimental work is pumped through the various pieces of apparatus from a well by means of two turbine pumping units, both of which are driven by a Belliss and Morcom compound engine of 125 h.p. running at a speed of 525 revs. per minute. Both engine and pumps have been installed with a view to using them in experimental work as well as for supply of water for other apparatus used in the laboratory.

The pumping units are capable of delivering one cubic foot of water per second against heads of 250 feet and 300 feet respectively. These units are designed and connected up so that they may be run in series giving the above discharge at 550 feet head, or they may be run in parallel giving double the discharge at a lower head. Each pumping unit consists of two two-stage pumps mounted on a common base and driven by a single pulley, and the construction and piping are such that each two-stage pump may be driven separately or that all may be driven at once, discharging separately one cubic foot per second at about 125 feet head through each of four independent pipes, or else the pumps may be run in series or in parallel. The scheme is thus well adapted to laboratory work, and under the heads used on reaction turbines about six cubic feet per second may be obtained.

The laboratory further contains a large vertical steel tank $5\frac{1}{2}$ feet diameter by 34 feet high with arrangements for the attachment of nozzles and other mouthpieces, etc. Connections are also arranged for reaction turbines, the tank acting as a reservoir.

The discharge from the turbines or nozzles is measured in a weir tank nearly 6 feet wide and 21 feet long, containing a contracted weir $4\frac{1}{2}$ feet wide. This weir may be calibrated by two weighing tanks, each having a capacity of about 240 cubic feet.

There are three reaction turbines and two impulse wheels all ready for experiment, the power being measured by brakes and the water by weir or orifices. Amongst the reaction turbines may be mentioned the one designed and built by Escher Wyss & Co., specially for the laboratory.

Smaller orifice and weir tanks, each about $3 \times 3 \times 12$ feet with necessary measuring tanks, are arranged for instruction in coefficients of various kinds and practice with weirs and orifices.

A Venturi meter and other meters, also an hydraulic ram and similar devices are available for testing, and good facilities have been arranged for investigating friction and other properties of pipes and fire hose.

For special investigations on turbine and centrifugal pumps, other pumps in addition to those already described have been arranged.

The basement of the laboratory contains an open trough 5 feet wide, about 110 feet long, with a large weir at one end. It is intended to use this trough for experiments on the flow in open channels, for measurements of large discharges by means of the weir, and for experiments with current meters and Pitot tubes.

Numerous pieces of smaller apparatus, together with all instruments required, have also been provided, and the laboratory equipment is believed to be very complete.

AERONAUTIC EQUIPMENT.

For the purpose of the scientific study of problems connected with aviation and the best design of aeroplanes, and also of all problems connected with the effect of wind pressure, a wind tunnel 4 ft. square has been installed in the Hydraulic Laboratory and equipped with the latest form of balance and all the necessary instruments.

The laboratory also contains a number of aeroplane engines of most modern type, both rotary and stationary, and a number of models; and also a complete Hispano Suiza aeroplane. These machines are available for inspection, and are of much help in studying the trend of development and design in the power plant of lightest weight.

**DONATIONS TO THE THERMODYNAMIC AND
HYDRAULIC LABORATORIES.**

The following donations to the equipment of the laboratories have been made through the kindness of those mentioned:

50 h.p. Wheeler Surface Condenser, presented by Mr. F. M. Wheeler, New York.

Blake Feed Pump, presented by the manufacturers.

6-inch New American Turbine, presented by Wm. Kennedy & Sons, Owen Sound, Ont.

Two Crown Water Meters, presented by the National Meter Co., New York, through Mr. M. Warnock, Toronto.

Rock Drill, presented by Sullivan Machinery Co., New York, through Mr. A. E. Blackwood, '95.

Marine Gasoline Engine, presented by Canadian Fairbanks Co., Montreal.

Two engines with different types of valve, presented by Messrs. E. Leonard & Sons, London, Ont.

Bundy trap from American Radiator Co., through Messrs. Russell & Gifford.

Dunham steam trap from C. A. Dunham Co.

Sectional models of valves from American Radiator Co.

Sectional model Mason Reducing Valve by Russell & Gifford.

Tanks, etc., by John Inglis Co. Pressure Fan from Sheldons Ltd. Galt.

In addition to the above, other firms have materially assisted by offering apparatus at or below cost price, among whom may be specially mentioned, The Canadian Rand Drill Co., Sherbrooke, Quebec.

The following machines are gifts from the Royal Air Force:

Liberty Aeroplane Motor 400 h.p.

200 B. h.p. Siddeley Deasey Aero Engine..

120 h.p. Beardmore Aero Engine.

Curtis Engine (Sectional).

Hispano Suiza Aero Engine.

80 h.p. Le Rhone Rotary Engine.

Clerget Rotary Engine.

Gnome Monosoupape Engine.

Admiralty Rotary Engine 150 h.p.

Hispano Suiza Aeroplane.

Models of Engines, etc., and numerous spare parts.

PHYSICAL LABORATORIES.

The optical laboratory is equipped with Weinhold optical benches and accessories for determining the constants of mirrors and lenses and for demonstrating the construction and use of telescopes, field glasses, microscopes, etc. There is also an equipment consisting of one or more of the following optical instruments:—field glasses, microscopes, reading telescope, small comparators, spectrometer, various types of photometer, small focometer, cathetometer, polariscope, illuminometer, standard gas light testing bench, projecting lanterns, etc.

The photographic laboratory is supplied with a number of hand cameras for the use of students. There are also larger cameras for Departmental work, copying cameras, enlarging lanterns and a kinematograph camera, printer and projector, electric blue-printing machine and the necessary dark rooms.

The hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balance, Jolly balance, Mohr's balance, hydrostatic press, vacuum pumps.

The heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat, expansion apparatus, air thermometer, apparatus for verification of Boyle's law and pressure and boiling point curve, and for determination of the absolute expansion of mercury, Callendar's apparatus for determination of the mechanical equivalent of heat.

The acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajous' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electropneumatic wind chest and standardized organ pipes and other accessories.

ELECTRICAL LABORATORIES.

Galvanometer laboratory.—The equipment of this laboratory is, in part, as follows: A set of D'Arsonval galvanometers conveniently located at tables about the laboratory, a set of resistance boxes for use with the same; measuring instruments, including ammeters, voltmeters, wattmeters, potentiometers and standard cells. Apparatus for the measurement of low resistance, including a ductor, and for high resistance, including a megger; several Carey Foster outfits and a Roller bond tester. There are also experimental lines for practice in locating faults, photometer outfits with rotating devices and various types of arc lamps.

Another room is fitted more especially for calibration of electrical instruments for alternating and direct currents. About one hundred and twenty portable measuring instruments are available for students' use, also standard instruments, including Weston laboratory standards, Kelvin balances and a Wolff potentiometer, with which the portable instruments may be compared.

Machine laboratory.—This laboratory, occupying two large rooms, contains twenty-five dynamos and motors varying in capacity from two to twenty kilowatts, adapted for experiments illustrating the properties of compound, shunt and series dynamos and motors, arc machines, as well as the use of interpoles. Switch-boards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines.

This laboratory also contains two 15 kw., 25 cycle and two special 15 kw., 60 cycle General Electric polyphase revolving field alternators direct driven by motors, two $7\frac{1}{2}$ kw. alternators, two rotary converters of 10 kw. and 5 kw. capacity, a $7\frac{1}{2}$ kw. General Electric polyphase induction motor with slip ring rotor, Westinghouse three-phase squirrel cage induction motors, Wagner single phase motor and unity power factor motor, Swedish General Electric variable speed motor, Westinghouse single phase series motor, Westinghouse alternator, and several three phase and single phase induction motors; also transformers, reactive coils, and other details, as in the direct current sections of the laboratory described above, for experiments on the properties of alternating currents and alternating current apparatus in general. A constant-current transformer with its load of six series arc lamps, a three-element oscillograph, for studying wave forms, a high potential transformer and a mercury arc rectifier may also be mentioned. The students are supplied with Weston, Westinghouse and Thomson portable instruments for measuring purposes.

A motor generator set has been installed, comprising a 65 h.p. motor driving on the same shaft a 30 kw. 110 volt d.c. generator and a 30 kw. 60 cycle 110 volt alternator with direct connected exciter.

Appliances are also provided for the study of saturation and hysteretic properties of samples of iron and steel, and models for exercise in winding armatures.

High tension room. In a separate room with proper automatic devices for safety to the operator, there is installed a 20 K.W. transformer with a range of voltages up to 200,000 volts. Studies of insulators may be carried out. It is expected that the facilities for measurement of high voltage will shortly be improved by the installation of a sphere gap. Work with high frequency also is in contemplation.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accommodation for 112 students, each working space being supplied with water, gas and fume cupboard. The laboratory for quantitative analysis will

accommodate 48 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 36 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. A laboratory for fourth year students with accommodation for eight workers has been fitted up. Each of these laboratories has its own balance room adjoining furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. A calorimeter room has been equipped in the basement. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

ELECTROCHEMICAL LABORATORIES.

The Electrochemical laboratories, which are situated in the Chemistry and Mining building, are provided with special facilities for electrolytic work, including a large storage battery and electroplating dynamo with tanks as well as a good set of apparatus and electrical measuring instruments. The experimental work on electric furnaces is performed in two rooms specially equipped for this purpose with rheostats and switch-board connections to a 120 kw. d.c. generator which supplies the current required.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building. One has a floor space of 17 feet x 47 feet, and the other 28 feet x 37 feet. Adjoining each is a room 15 feet x 11 feet, with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances set on a concrete pier. Each of the laboratories contains a number of melting holes for crucible fusions, various gas and oil furnaces both for crucibles and muffles, and two large brick muffle furnaces.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 feet x 13 feet) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

METALLURGICAL LABORATORY.

This laboratory is on the basement floor of the Chemistry and Mining Building. The main room has a floor space of 1600 square feet.

Among the larger furnaces included in the equipment of the laboratory are a six hearth Wedge mechanical roasting furnace, the gases from which pass through Cottrell precipitating pipes 12 inches in diameter, and which are served with rectified current at 50,000 volts. There is also a gas fired muffle roasting furnace, a Steele-Harvey tilting furnace, a large resistance furnace for high temperature work, two water jacketed blast furnaces and a copper converter.

The laboratory has several small furnaces of various types. Facilities are provided for pyrometric work, for zinc retorting, for furnace gas analysis, for leaching of ores and for the electrolytic refining and precipitation of metals.

There is a laboratory for the testing of clays equipped with grinding pan, ball mill, presses, gas fired and oil fired kilns.

MILLING AND CONCENTRATING LABORATORY.

A detached building, 72 feet x 70 feet in area, contains the milling and concentrating equipment. It is heated, lighted and supplied with electric power from the central plant, and is divided into two parts. The greater part, with 72 feet x 53 feet floor space, and 22 feet high, contains the milling and concentrating equipment. The machinery for the former operations consists of a five-stamp battery erected on concrete foundations, Challenge ore feeder, amalgamating plates, Wilfley table, a clean-up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. This is driven by a 15-horsepower motor.

The concentrating part consists of a set of five revolving trommels for wet screenings, four three-compartment jigs, a trough classifier delivering three products, and two revolving buddles, Wilfley Slimer, Deister Slimer, Richard's Pulsating Classifier, Richard's Pulsating Jig, a dry sizer, besides experimental apparatus of various kinds for experimenting on the falling rates of ore particles, the settling of slimes, surface tension action in oil and flotation methods, etc. The waste products run to the same settling tanks as the tailings from the stamp battery. The ore is handled by a travelling crawl. All the machinery in this part is driven by electric motors.

The lower floor has been fitted up for lixiviation work with apparatus for the treatment of sands and slimes, different types of filter press, vacuum plant agitators, etc.

The plant throughout is intended mainly for teaching and experimental purposes and is made of such a size that numerous experiments can be carried out on small quantities of ore. Tests can also be made on lots of one to ten tons.

The other part of the milling building with 72 feet x 17 feet floor space and 15 feet high is divided into four separate rooms. The largest of the four rooms has an area of 476 square feet and is devoted to the crushing and pulverizing of the ores preparatory to their treatment in the milling

and concentrating room. It is isolated in order to confine the dusty operations as far as possible to this one room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches, platform scales for weighing ore, a jib crane, pulleys, buckets, etc., for handling the rock. An adjoining room contains a 30 h.p. motor for driving the machinery of the crushing department, and storage bins for ore, work bench, etc. Another room with 17 feet x 15 feet floor space is furnished with a magnetic separator of the Rowan-Wetherill type, driven by its own motor.

STRENGTH OF MATERIALS LABORATORY.

This laboratory is intended for the scientific and commercial testing of materials of construction such as iron, steel, timber, concrete and masonry.

It is supplied with the following:

An Emery 50-ton hydraulic machine, built by Wm. Sellers & Co., of Philadelphia, for making tests in tension and compression.

A 100-ton screw power machine, built by Riehle Bros., Philadelphia. It is designed for making tests in tension, compression, shearing and cross-breaking, and will take in posts 12 feet long and beams up to 18 feet in length.

A Riehle 10-ton screw power universal testing machine.

A Riehle 50-ton screw power universal testing machine.

A 15-ton single lever-machine, built by J. Buckton & Co., Leeds, England.

A torsion machine, built by Tinius Olsen & Co., Philadelphia, for testing the strength and elasticity of shafting. This machine will twist shafts up to 16 feet in length and 2 inches in diameter.

A hand power torsion machine of simple mechanical construction, specially designed for the testing of short shafts of a maximum diameter of one inch.

A Riehle transverse testing machine of 5,000 pounds capacity, adapted to specimens up to 48 inches in length.

A Riehle compressometer, with spherical seat attachment for the adjustment of specimens having slightly non-parallel faces. This compressometer will receive specimens up to 10 inches in length.

An Olsen compression micrometer of standard type.

A 20,000 pound Olsen, hand power, wire testing machine, specially fitted for testing wooden columns with both fixed and pivoted ends.

A Riehle abrasion cylinder, built to the standard required by the National Brickmakers' Association, adopted in 1901.

A Berry strain-gauge for spans of 3 inches and 8 inches.

A Nalder dividing engine. This may be used either for the precise division of scales or for the calibration of instruments intended for refined measurements.

A large number of extensometers of the usual degree of precision. These include the Bauschinger, Martens, Unwin, Ames, Riehle, Johnson, Henning (recording) and other types. In addition there are the usual scales, micro-meters, telescopes and reflectors, voltmeters for the determination of metallic contact, and such other appliances as are necessary in the making of precise measurements.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labour. It is also supplied with the necessary appliances for making ordinary repairs and for making apparatus for special experiment and original investigation.

HIGHWAY MATERIALS LABORATORY.

This laboratory is equipped for carrying out investigations in the various materials employed in highway construction and maintenance, and comprises the following:

Page impact machine for testing the toughness of road materials.

Diamond core drill for preparing specimens for the toughness test.

Deval abrasion machine for testing the resistance to wear of road materials.

Cementation testing apparatus (Page type) for determining cementing properties of road materials.

Jaw crusher (Mitchell type) for crushing rock for various tests.

Power driven agitator with sieves for the mechanical analysis of sand, gravel and crushed rock.

The laboratory is also equipped with the appliances necessary for examining physical properties:—volatilization, specific gravity, viscosity, melting point, penetration, ductility, etc., of oils, asphalts, tars and other bituminous mixtures used in road construction and maintenance.

LABORATORY OF ONTARIO BOARD OF HEALTH.

Through the courtesy of the Secretary of the Provincial Board of Health for Ontario the facilities of the excellently equipped laboratory which the Board maintains at Stanley Park have, with certain conditions, been placed at the service of the University for the investigation of problems of interest to the sanitarian and the sanitary engineer. The equipment consists of various types of sewage sedimentation tank, sewage filter, sewage measuring devices, aerators, sterilizing appliances and a complete and representative plant intended for the filtration and sterilization of water by practically all known methods.

CEMENT TESTING LABORATORY.

This laboratory is fitted with all the ordinary moulds, sieves, balances, burettes, steaming and drying tanks, tables, and other appliances necessary in making the usual physical tests of a Portland cement. It is also supplied with completely equipped cabinets for individual work. In addition there are the following:

A 2,000 lb. Riehle machine fitted for either tension or compression.

A 2,000 lb. Riehle shot machine for tension.

A 2,000 lb. Fairbanks shot machine for tension.

A 1,000 lb. Olsen automatic shot machine fitted for tests in either tension or cross breaking.

An Olsen soapstone moist closet of modern design.

METROLOGICAL LABORATORY.

The department of surveying and geodesy is provided with all the ordinary field instruments, such as transits, levels, compasses, micrometers, sextants, planimeters, plane tables, tapes, chains, etc., with which is carried on the instruction in practical field operations as detailed elsewhere.

A small laboratory is also established in the basement of the observatory described below, containing the necessary instruments for the refined measurements of geodetic surveying; as, a standard yard and metre, a Rogers 10-foot comparator, an invar base measuring apparatus, a Kater's pendulum with vacuum chamber, a level trier, micrometer microscopes, etc.

The geodetic observatory in connection with this department is used for the instruction of students of the Fourth Year in taking observations for time, latitude, longitude, and azimuth by the precise methods used in connection with a geodetic survey. It contains a 10-inch theodolite and zenith telescope by Troughton & Simms; an astronomical transit instrument and an 8-inch theodolite by Cooke; two electro-chronographs; a Howard astronomical clock; a Dent sidereal clock; a Dent sidereal break-circuit chronometer; a wireless receiving instrument; arithmometers, etc.

GEOLOGICAL AND MINERALOGICAL LABORATORIES.

In the Chemistry and Mining building on College Street the University possesses a modern laboratory for Geology and Mineralogy.

Courses are given in laboratory work, especially in personal examination of type sets of rocks, fossils, minerals and crystal models. These laboratory exercises serve to illustrate the introductory didactic instruction.

For the encouragement of pure crystallography the laboratories are supplied with goniometers of the various types, crystal models, appliances for the cutting of oriental crystal sections and for the physical examination of the same. Practical petrography is carried on in rooms provided with type sets of rocks, both macroscopic and microscopic. Advanced students are taught to make thin sections of rocks and fossils and to study them microscopically. For students in Mining a laboratory course in the interpretation of geological maps and sections is provided. Typical mining regions are studied in detail and an opportunity is afforded for the examination of specimens illustrating economic geology.

The laboratory for the preparation of thin sections of rocks, minerals and fossils is provided with electric diamond saws and grinding appliances for the various types of work incidental to the preparation of thin sections and museum material.

A room is also provided for advanced work in cartography and geological surveying.

The departments possess 28 petrological microscopes and 5 of other types, so that it is now possible to provide advanced students with instruments and sets of thin sections for their own especial use. The blowpipe laboratory contains 156 lockers, especially designed for apparatus for students.

LIBRARY.

Rooms have been set apart in the Engineering and the Chemistry and Mining buildings for the housing of such periodicals and other literature of the University Library as is of special interest to the students of this faculty.

The University Library is contained in a building of its own, situated on the east side of the campus, that lies to the south of the Main Building. All students who have paid a library fee to the Bursar of the University are entitled to the privileges of the Library. Besides Reading Rooms the Building contains Departmental Studies, which may be used as study-rooms by honour students in the various branches and in which the Professors hold seminary courses. The Library is opened at 8.45 every morning and remains open until 5.15 in the afternoon (6 p.m. during the second term). Books may not be taken out of the building during the daytime, but are lent for the night shortly before the hour of closing, to be returned the following morning before 10 o'clock. Books not in general demand may, on special application, be borrowed for a longer period. Failure to return a borrowed book at the proper time and other breaches of the regulations are punishable by fine or suspension from the privileges of the Library.

ROYAL ONTARIO MUSEUM.

Archaeology, Geology, Mineralogy, Palaeontology, Zoology.

Students of the University in all departments are recommended to avail themselves of the privileges of the Museum, which, although under separate control, is intimately connected with the work of the University.

The Museum is open on all week days from 10 a.m. to 5 p.m. The admission is free to the public on Tuesday, Thursday and Saturday. On other days an admission fee of fifteen cents is charged.

By a resolution of the Board of Trustees all regular students of the University may be admitted free on all days of the week by presenting their card of registration.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE UNIVERSITY OF TORONTO.

Officers for 1918-1919.

<i>President</i>	D. K. C. Strathearn
<i>Vice-President</i>	G. C. Bennett
<i>Treasurer</i>	C. G. R. Armstrong
<i>Corresponding Secretary</i>	N. H. Illman
<i>Recording Secretary</i>	C. M. Beck
<i>Curator</i>	P. J. Culliton
<i>Fourth Year President</i>	J. E. Hess
<i>Third Year President</i>	R. D. Keenleyside
<i>Second Year President</i>	F. W. Dunton
<i>First Year President</i>	F. S. Spence
<i>Civil Club Representative</i>	E. C. Cowan
<i>Mining Club Representative</i>	J. C. E. Skinner
<i>Electrical Club Representative</i>	J. M. Harkins
<i>Chemical Club Representative</i>	A. R. Clarry
<i>Architectural Club Representative</i>	W. A. Mollard

The Society meets every second Wednesday during the academic year (except April), beginning with the third Wednesday in October. Papers are read, and discussions are held on engineering subjects. The Society publishes a journal monthly during the year, containing the best papers read at the meetings. A supply department is conducted by the Society, on a co-operative plan, through which instruments, drafting supplies, stationery, etc., may be purchased at a low cost. The Society is divided into five clubs for the purpose of affording a medium of study of matters relating in particular to the different departments of engineering.

THE INDUSTRIAL CHEMICAL CLUB.**Officers for 1918-1919.**

<i>Hon. President</i>	Dean Ellis
<i>Hon. Vice-President</i>	Dr. M. C. Boswell
<i>Chairman</i>	J. H. Forman
<i>Vice-Chairman</i>	A. Hambleton
<i>Fourth Year Representative</i>	A. R. Clarry
<i>Third Year Representative</i>	H. B. Cody
<i>Second Year Representative</i>	T. M. Barry
<i>First Year Representative</i>	J. J. Crawford
<i>Secretary-Treasurer</i>	A. D. R. Fraser
<i>Curator</i>	W. R. Richardson

The object of the Chemical Club is to promote the study of industrial chemistry and chemical engineering. Illustrated lectures, preceded by an informal dinner and a short musical programme, are held fortnightly, and on the following day an excursion is made to industrial chemical concerns located in the city or vicinity.

MECHANICAL AND ELECTRICAL ENGINEERING CLUB.**1918-1919.**

<i>Chairman</i>	J. M. Harkins
<i>Vice-Chairman and Fourth Year Representative</i>	H. Rose
<i>Secretary and Third Year Representative</i>	H. E. Preston
<i>Treasurer and Second Year Representative</i>	A. C. Blue
<i>Curator and First Year Representative</i>	C. S. Scadding

The Club meets every Thursday during the academic year for the discussion of papers relating to mechanical and electrical engineering problems.

CIVIL ENGINEERING CLUB, 1918-1919.

<i>Chairman</i>	E. C. Cowan
<i>Fourth Year Representative</i>	H. L. Dowling
<i>Third Year Representative</i>	R. Harrison
<i>Second Year Representative</i>	W. D. Coulter
<i>First Year Representative</i>	L. J. Robinson

The Club is addressed during the academic year by practising engineers on modern methods and problems in civil engineering.

MINING AND METALLURGICAL ENGINEERING CLUB

Officers for 1918-1919.

<i>Honorary President</i>	Prof. G. A. Guess
<i>President</i>	J. C. E. Skinner
<i>Vice-President</i>	E. A. Rolph
<i>Secretary-Treasurer</i>	H. M. Shepard
<i>Chairman Accommodation Committee</i>	C. M. Beck
<i>Chairman Subject Matter Committee</i>	G. M. Thorpe
<i>Chairman Plant Visiting Committee</i>	C. W. Coe

The Club is affiliated with the American Institute of Mining Engineers, which, in addition to other services rendered, takes a direct interest in obtaining positions for the students during the summer. The object of the Club is to hold frequent meetings at which prominent men in the mining and metallurgical industries speak, and to visit plants.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION

DIRECTORATE, 1919-1920.

<i>Honorary President</i>	R. A. Falconer, D.Litt., LL.D.
<i>President</i>	Prof. M. A. Mackenzie
<i>Vice-President</i>	S. A. Moote
<i>Secretary-Treasurer</i>	T. A. Reed
<i>Physical Director</i>	Dr. J. W. Barton

Directors for 1919-1920:

Prof. C. H. C. Wright, Hugh Gall, B.A.Sc., F. C. A. Houston, Wendell Holmes, D. A. C. Martin, W. A. Dafoe, D. J. Sinclair

The Athletic Association has full control over all athletic clubs using the name of the Faculty of Applied Science. The Executive Committee has power to suspend any one from the privileges of membership in the Association for any breach of its regulations, and controls the finances of all athletic clubs in the aforesaid Faculty. The annual membership fee of this Association is fifty cents.

No other moneys are collected for the support of athletics in the Faculty of Applied Science without the sanction of the Executive Committee.

RUGBY FOOTBALL CLUB OF THE UNIVERSITY OF TORONTO.

Officers for 1919-1920.

<i>Honorary President</i>	Prof. C. H. C. Wright
<i>Honorary Vice-President</i>	C. E. Gage
<i>President</i>	Wendell Holmes
<i>Secretary</i>	F. A. Ireland
<i>Manager senior team</i>	Dan Maclean
<i>Captain senior team</i>	To be elected

The Mulock Cup, which was presented by Sir Wm. Mulock, M.A., LL.D. to the University of Toronto Rugby Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB OF THE UNIVERSITY OF TORONTO.

Officers for 1919-1920.

<i>Honorary President</i>	Prof. C. B. Sissons
<i>President</i>	A. L. Huether
<i>Secretary-Treasurer</i>	A. E. Effrick
<i>Manager</i>	S. W. Archibald
<i>Captain</i>	To be elected

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

HOCKEY CLUB OF THE UNIVERSITY OF TORONTO.

Officers for 1919-1920.

<i>Honorary President</i>	Dr. A. B. Wright
<i>President</i>	W. A. Dafoe
<i>Vice-President</i>	P. F. McIntyre
<i>Manager senior team</i>	J. G. Countryman
<i>Captain</i>	To be elected
<i>Secretary</i>	W. M. Gordon

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of the late W. T. Jennings, Mem. Inst. C.E.

TRACK CLUB.

Officers for 1919-1920.

<i>Honorary President</i>	Dr. W. E. Willmott
<i>President</i>	Dr. W. E. Brown
<i>Secretary-Treasurer</i>	G. H. S. Ramsay

BOXING AND WRESTLING.

<i>Honorary President</i>	Prof. A. T. DeLury
<i>President</i>	L. R. Dodds
<i>Secretary-Treasurer</i>	J. E. T. Musgrave
<i>Acting Manager</i>	F. C. A. Houston

FENCING.

Honorary President Prof. R. E. L. Kittridge
President L. D. Carver
Secretary L. J. Miller

GYMNASIUM CLUB.

Honorary President G. A. Keith
President R. D. Huestis
Vice-President R. C. Hays
Secretary and Manager J. B. Ridley

LACROSSE.

Honorary President Dr. Frank Park
President W. A. Dafoe
Secretary and Manager Wendell Holmes

TENNIS.

Honorary President Prof. Hook
President W. B. Dickson
Secretary D. A. Martin

SWIMMING.

Honorary President Dr. Kirkwood
President W. J. Hambly
Secretary-Treasurer J. J. Martin

HARRIER.

Honorary President Capt. J. H. Adams
President P. J. Dykes
Secretary and Manager J. Geoghegan

BASKETBALL CLUB.

Season 1919-1920.

Honorary President Dr. Clemens
President C. H. Urquhart
Secretary-Treasurer E. J. L. Coles
Manager To be elected

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

<i>Officer Commanding</i>	Major L. L. Anthes.
<i>Captain</i>	Valentine Boyd.
<i>Lieutenant (seconded overseas)</i>	A. J. S. Davidson.
“ “ “	E. Pepler.
“ “ “	L. Drummond.
“ “ “	E. F. Lynn, M.C.
“ “ “	F. A. McGivern.
“ “ “	T. R. Young.
“ “ “	T. R. Loudon
“ “ “	J. B. Heron.
“ “ “	Hugh Gall.
“ “ “	T. A. Hyam.
“ “ “	J. W. Monds.
“ “ “	R. S. Stone.
“ “ “	H. P. Frid.
“ “ “	H. B. Duthie.
“ “ “	A. L. Mieville.
“ “ “	L. W. Klingner, M.C.
<i>Medical Officer</i>	Major J. W. S. Barton
<i>Chaplain</i>	Capt. T. G. Wallace.

FACULTY OF APPLIED SCIENCE.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Y.M.C.A. of the Faculty of Applied Science was organized January 27th, 1905, and forms an integral part of the University of Toronto Y.M. C. A., which is a Federation of the Associations of the various Colleges and Faculties of the University. The object of the Association is to develop a true Christian manhood and to help the students in whatever way possible.

FACULTY OF APPLIED SCIENCE.

VARSITY REPRESENTATIVES

<i>Senior</i>	A. Hambleton
<i>Junior</i>	A. D. R. Fraser

UNIVERSITY OF TORONTO C.O.T.C.

Staff.

<i>Lieut.-Colonel</i>	W. R. Lang.
<i>Major</i>	A. D. LePan.
<i>Major</i>	C. V. Massey.
<i>Adjutant</i>	G. N. Bramfitt.
<i>Quartermaster</i>	Lieut. C. H. C. Wright.
<i>Paymaster</i>	Lieut. T. A. Reed.
<i>Medical Officer</i>	Capt. J. W. Barton.
<i>Musketry Officer</i>	Capt. F. B. Kenrick.

Establishment: 12 Companies and 1 half Company.

UNIVERSITY OF TORONTO, STUDENTS' ADMINISTRATIVE
COUNCIL.

<i>President Engineering Society</i>	D. K. C. Strathearn
<i>Fourth Year Representative</i>	J. E. Hess
<i>Third Year Representative</i>	R. D. Keenleyside
<i>Second Year Representative</i>	F. W. Dunton
<i>First Year Representative</i>	F. S. Spence

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the University, at a cost of from six dollars a week upwards for comfortable lodging with board; or rooms may be rented at a cost from two dollars and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

UNIVERSITY RESIDENCES.

By the generosity of Mr. and Mrs. E. C. Whitney and other friends, the University can now offer to some hundred and fifty men the peculiar advantages of residential life and excellent accommodation within its own grounds. The Residence, opened in November, 1908, consists of three Houses situated on the north side of Hoskin Avenue, opening upon a quadrangle, the fourth side of which is formed by Devonshire Place. They stand about two hundred yards to the north of University College and of the University Dining Hall and close to the University Gymnasium and Athletic Field. The buildings are known as the South, East and North Houses.

Each House contains twenty-four single rooms, one single suite, one double room and eleven suites, a suite comprising a study and two bedrooms. A large room in each building, with an open hearth and a library has been set aside as a common room. A lavatory with hot and cold shower baths is provided for every eight men. The buildings are heated by steam and lighted by electricity.

The University supplies the table, chairs, book-case, chiffonier, bed, mattress, pillows, linen and window shades for each room; it is prepared to furnish a drop-light for a nominal rental.

Each occupant is charged \$3.00 room-rent per week, payable to the Bursar four weeks in advance. The charge for each single suite is \$4.00 per week. These charges cover heat, light, house-service, house-laundry, and the use of the telephone. There is no separate dining hall connected with the Residence, but board may be obtained at the adjacent University Dining Hall for \$4.50 per week.

Applications for rooms must be made in writing to the Secretary of the Residence Committee (address the Registrar's Office) and must be accompanied by a deposit of \$5.00. This deposit will be returned if the application be not granted, and will be forfeited if a room is assigned to the applicant and not taken by him, unless notice of his refusal of the room

be received by the Secretary in writing before September 8th. It will be returned in full at the end of the College year if the room key be given back and the room and furniture left in a satisfactory condition. The following principles govern the allotment of rooms: (i) In order to be assigned a room in the Residence, either before or during the session, a student must have obtained standing at the previous spring examination, with not more than *one* condition against him. (ii) The rooms in each House will be distributed proportionately between the various Faculties and Years. (iii) A limited number of rooms will be reserved for members of the incoming First Year until September 18th. (iv) Applications will be considered in order of priority.

The University lays down three general rules, designed to prevent hazing, the use of intoxicants and gambling. The students in each House shall elect a House Committee, which is entrusted by the University with the making and enforcing of any other needed rules and with the maintenance of order. A member of the Faculty resides in each House to act as friend and adviser to the men in residence.

FACULTY OF APPLIED SCIENCE.

REGISTER OF STUDENTS 1918-1919.

First Year.

3 Ahara, E. V.....	Toronto	6 Johnson, A.....	Orillia
1 Archibald, S. W.....	Seaforth	3 Kerr, H. H.....	Seaforth
7 Barbour, Miss J. E.....	Meaford	3 Kirkconnell, H. R.....	Lindsay
7 Benson, W. R.....	Toronto	3 Kirkconnell, J. R.....	Lindsay
6 Best, G. C.....	Brussels	3 Kischel, F. W.....	Toronto
7 Bishop, W. V.....	Kimberley	3 Kischel, G. H.....	Toronto
4 Blake, V. B.....	Toronto	1 Langlois, W. L.....	Toronto
6 Bongard, G. R.....	Toronto	2 La Ronde, H. J.....	Toronto
6 Broughall, G. M.....	Toronto	6 Lindsay, A.....	Dover Centre
2 Brown, E. L.....	Toronto	7 McGrath, R. J....	St. Catharines
6 Buchan, J. E.....	Sarnia	1 McIntyre, V. H.....	Toronto
7 Burns, D.....	Brantford	6 McLaughlin, R. R.....	Toronto
1 Byram, A. T.....	Toronto	7 McLean, G. E.....	Thornbury
3 Bysshe, H. A... Greenfield, Mass.		7 McNiven, J. G.....	Acton
2 Chambers, A. J.....	Toronto	3 MacAllister, J. S. E.....	Toronto
1 Clarke, T.....	Toronto	6 MacDougall, H. A.....	Toronto
7 Coles, F. B.....	Brantford	2 Mackle, W. P.....	Toronto
2 Coe, C. W.....	Toronto	6 Mallett, G. S.....	Toronto
7 Coulthard, H. S.,		7 Mayberry, J. S.....	Stratford
Chefoo, N. China		1 Maynes, C.....	Toronto
6 Crawford, J. J.....	Toronto	7 Montemurro, M....	North Bay
2 Crombie, J. K. B., St. Catharines		3 Mummery, C. R.....	Hamilton
6 Day, G. A.....	Guelph	3 Murphy, A. R.....	Wardsville
6 Dilworth, H. M.....	Toronto	4 Noxon, K. F.....	Toronto
3 Doran, J. Y.....	Toronto	6 Parker, R. E.....	Tavistock
1 Dougall, C. H.....	Hamilton	6 Parker, R. R.....	Stirling
3 Evans, M. M.....	Bradford	6 Pearen, C. B.....	Toronto
6 Everest, T. E.....	Toronto	2 Perry, J. C.....	Uxbridge
7 Fenwick, J. R.....	Toronto	7 Porter, W. J.....	Powassan
7 Fitzgerald, W. W.....	Toronto	1 Powell, H. R.....	Grenfell, Sask.
6 Fotheringham, D. T....	Toronto	3 Powell, M. V.....	Peterboro
7 Fuller, G. B.....	Arkona	1 Pratt, A. O.....	Ottawa
1 Gibbs, J. W. S.....	Kincardine	1 Pratt, D. L.....	Midland
7 Goodwin, J. E.....	Toronto	7 Queen, G.....	Toronto
6 Grant, W. J.....	Toronto	1 Reynolds, W. M.....	Aurora
7 Graves, H. P.....	London	6 Richardson, W. R.....	Essex
6 Gray, F. M.....	Toronto	1 Robinson, L. J.....	Toronto
1 Greig, A. K.....	Toronto	7 Scadding, S. C.....	Toronto
1 Guscott, A. G.....	Toronto	6 Schatz, M. H.....	Toronto
6 Hamilton, C.....	Toronto	6 Schemnitz, D. A.....	Toronto
3 Harlow, G. H.....	Toronto	7 Scott, R. K.....	Pakenham
1 Hayman, H. G.....	Toronto	6 Sherck, W. S.....	Sherkston
6 Heatley, A. H.....	Brampton	1 Siddall, K. C.....	Islington
7 Heisey, K. B.....	Markham	6 Spence, F. S.....	Toronto
2 Henderson, G. C.....	Tara	7 Spotton, J. G.....	Harriston
7 Henry, S. W.....	Stratford	3 Stewart, V.....	Milestone, Sask.
2 Horning, A. G.....	Toronto	3 Stuart, G. L.....	Toronto
7 Howden, H. E.....	Caledonia	7 Thomlinson, J. F.....	Toronto

2 Thorpe, G. M.....	Toronto	7 Williamson, R. J.....	Toronto
6 Van Dusen, F. H.....	Toronto	7 Wilson, A. R. H.....	Oshawa
3 Werner, A. A.....	Port Dover	6 Winter, L. A. G.....	Toronto
6 Westren, J. H.....	Toronto	3 Woelfle, E. J.	Chesley
3 Whiteside, J. J....	Little Britain	6 Wynne-Roberts, R. I...	Toronto
3 Wilford, H. J. D.....	Lindsay	7 Yack, W. L.....	Walkerton
1 Williams, R. H.....	Burlington		

Second Year.

1 Augustine, W. P....	Port Colborne	3 Hulfish, B.....	Toronto
6 Barry, T. M.....	Hamilton	6 Knight, H. A.....	Guelph
2 Beck, C. M.....	Penetang	5 Lailey, C. P.....	Toronto
5 Bell, J. C.....	Seaforth	3 Laird, C. H.....	Hamilton
3 Blue, A. C.....	Wallacetown	1§ Legate, J. H.....	Owen Sound
6 Brody, D.....	Blyth	4 Livingston, A. H.....	Brantford
3 Chaikoff, S.....	Toronto	1 Mackenzie, A. P.....	Toronto
5 Churchill, J. W.....	Toronto	1 MacLean, C. H.....	Chesley
1 Coulter, W. D....	Port Robinson	7 MacLean, H. K.....	Toronto
3 Crane, H. C.....	Toronto	3 Maunder, W. F.....	Lindsay
1 Culliton, P. J.....	Stratford	4 Niece, H. P.....	Preston
2 Doner, G. B.....	Stayner	1 O'Brien, A. E.....	Toronto
7 Dunton, F. W.....	Brampton	6 Phillips, J. F.....	Toronto
3 Eckert, F. R.....	London	1 Pinel, W. G.....	Toronto
5 Elliot, C. R.....	Toronto	7 Playfair, L. I.....	Lanark
6 Emory, V. H.....	Toronto	7 Prendergast, R. M.....	Toronto
5 Fair, H. A.....	Toronto	5 Presgrave, R.....	Toronto
5 File, R.....	Toronto	2§ Purdy, H. E.....	Port Perry
7 Flynn, J. P.....	Merritton	1 Rayner, G. V.....	Hamilton
5 Fraser, A. D. R.....	Toronto	1 Reid, G. G.....	Toronto
4 Gallanough, R.....	Toronto	2 Rolph, E. A.....	Toronto
7 Gardner, J. W.	Hamilton	6 Schierholtz, O.....	Elmira
5 Goldstick, D.....	Toronto	8 Shepard, H. M.....	Hamilton
6 Gundy, J. V.....	Windsor	3 Shortt, J. E. B.....	Toronto
5 Haberman, W.....	Toronto	3 Stafford, M. C.....	Toronto
4 Hall, Miss J. M.....	Toronto	3 Voaden, V.....	St. Thomas
4 Hall, R. W.....	Brampton	5 Weelands, J. E.....	Owen Sound
3 Hamilton, J. B., Fort Qu'Appelle, Sask.		7 Wilson, A. S.....	Woodstock
1 Hannan, B. T.....	Toronto	1 Wimperly, C. C.....	Oakville
6 Harrison, D. R.....	Tamworth	6 Wingfield, A. H.....	Hamilton
7 Henry, S. E.....	Stratford	2 Wyllie, W. J. E.	Kamloops, B.C.
7 Houston, F. C. A.....	Toronto		

Third Year.

1 Armstrong, C. G. R.....	Merlin	2 Graham, C. W., Edmonton, Alta.	
1 Baker, G. H.....	Toronto	5 Hambleton, A.....	Toronto
1 Bennett, G. C.....	Midland	7 Hardie, R. C....	Esquimalt, B.C.
7§ Booth, F. W.....	Toronto	1 Harrison, R.....	Birch Cliff
7 Brimer, L. F....	Winnipeg, Man.	4 Hill, Miss E. M., Strathcona, Alta.	
3 Chambers, J. L.....	St. Mary's	7 Illman, N. H.....	Chatham
6 Cody, H. B.....	Hamilton	1 Irvin, W. F.....	Toronto
5 Corman, H. E.....	Caledonia	3 Keenleyside, R. D.....	London
6 Dingman, A. H.....	Toronto		
6 Faill, J.....	Stratford		

§ Returned soldier reviewing.

4 Kentner, Miss M. A.....Toronto	7 Pullan, E.....Toronto
6 Kerman, H. C.....Toronto	7 Resnik, M. M...Winnipeg, Man.
7§Little, H. B., New Westminster, B.C.	1 Riehl, W. H.....Stratford
1 McEachern, K. J.....Alvinston	1 Salisbury, E. A.....Toronto
6 McLean, B. M.....London	2 Skinner, J. C. E.....Bradford
7 McLellan, J. D.....Toronto	6 Soehner, H. C.....Stratford
7 Mitchell, M. H....South Oshawa	7 Stewart, A. L.....Kirkton
1 Paterson, E. L.....Blantyre	1§Wait, G. E.....Ottawa
7 Preston, H. E.....Midland	7 Wilson, A. E.....Port Perry
	7 Young, H. G.....Scarboro Jct.

Fourth Year.

7 Brown, W. D....Forester's Falls	1 MacIntyre, W. B.....Belmont
1 Browne, W. J...St. John's, Nfld.	1 MacNicol, N.....Toronto
1 Caldwell, H. J.....Toronto	1 Matthews, F. J.....London
3 Campbell, T. W...Smith's Falls	4 Mollard, W. R.....Toronto
5 Clark, J. E.....Toronto	4 McAvoy, O. H.....Stouffville
6 Clarry, A. R.....Locust Hill	1 McColl, J. R.....Caledonia
1 Cowan, E. C....Winnipeg, Man.	1 Norwich, H. B.....Toronto
1 Dowling, H. L.....Toronto	3 Park, R. T.....Peterboro
7 Durand, R. A.....Toronto	7 Reed, H.....Toronto
1 Edmonds, C. W.....Simcoe	7 Reid, W. M.....Vinemount
6 Forman, J. H.....Grimsby	7 Rose, H.....Sarnia
7 Harkins, J. M.....Toronto	1 Snow, G. B.....Toronto
7 Hess, J. E.....Zurich	1 Strathearn, D. K. C....Midland
1 Hopper, G. H.....Toronto	6 Swinnerton, A. A.....Toronto
1 Johnston, S. H.....London	7 Tennyson, A. L.....Port Perry
1 Kearns, N.....Toronto	7 Thomas, A. M.....Toronto
3 Lesperance, L. J.....Essex	

**SPECIAL SESSION, FEBRUARY 1ST TO JULY 1ST, UNDERTAKEN
FOR THE BENEFIT OF STUDENTS RETURNED FROM ACTIVE
SERVICE.**

First Year.

1 Chater, W. N.....Toronto	6 Mahaffy, A. W...Sceptre, Sask.
1 Cook, R. H. B.Aurora	6 Marks, G. R.....Toronto
6 Dignam, H. M.....Toronto	1 Massey, D.....Toronto
7 Duncan, W. C. C.....Toronto	6 Mellish, A. H.....Brantford
3 Evans, G. F.....Bradford	6 Meyer, H. B.....Brantford
1 Everson, S. F.....Oshawa	6 Moor, H. H.....Toronto
6 Fair, A. E. H.....Midland	7 Paul, R. J.....Sunderland
7 Gower, J. L.....Toronto	1 Pearce, W. R.....Toronto
6 Haldenby, C. N.....Toronto	6 Reynolds, H.....Toronto
1 Hawkins, W. J. H....Islington	7 Rosebrugh, D. W.....Toronto
1 Helliwell, A. L.....Toronto	1 Sanderson, A. C.....Toronto
2 Henry, R. J.....Grimsby	4 Saunders, D. C.....Toronto
1 Horning, H. G.....Hamilton	7 Strickland, D. D.....Toronto
6 Laird, R. G.....Seaforth	7§Thompson, R. J.....Toronto
6 McKeown, C. J. W..Mono Road	6 Wass, F. L.....St. Mary's
3 Magee, J. G.....London	1 West, J. A.....Simcoe

§ Returned soldier reviewing.

Second Year.

2 Wilson, C. O.....Midland	3 Macdonald, D. M., Edmonton, Alta.
3 Brickenden, W. T.....Toronto	1 Marsh, E. J.....Grimsby
4 Crowell, C. W.....Sydney, N.S.	1 Meader, J. C.....Toronto
7 Doherty, W. A.....Toronto	1 Monteith, J. C.....Stratford
3 Dunn, E. A.....Chatham	7 Murphy, C. J.....London
2 Fawcett, T. C.....Gravenhurst	1 Parker, W. J.....Toronto
1 Gillespie, J.....Seaforth	1 Pepler, S. H.....Toronto
7 Graham, H. C.....Elmvale	7 Ratcliff, J. H.....Stouffville
7 Hepburn, G.....Milton	1 Richardson, F. C. G....Toronto
7 Herold, W. H.....Shakespeare	1 Smith, C. T.....St. Thomas
8 Irwin, A. L.....Toronto	7 Stalker, W. D.....Simcoe
7 Lawrence, A. M.....Toronto	1 Steel, G. E.....Toronto
7 Lyon, G. M.....Collingwood	3 West, T. M.....Toronto
8 McIntyre, P. F.....Perth	4 Wright, B. H.....Toronto

Third Year.

3 Centner, M. H.....Toronto	1 Julian, F. T.....Malton
1 Dafoe, E. R.....Napanee	5 Musgrave, J. E. T.....Toronto
7 Dancey, W. A.....Goderich	1§Shoebottom, L. R.....London
1 Dustan, E. B.....Pictou, N.S.	4 Thompson, C. C.....Toronto
7 Forster, C.....Kingsville	7 Turnbull, A. G.....Galt
7 Hill, C. R.....Weston	1 Ure, D. G.....Woodstock
3 Holland, U. C.....London	3 Weir, M. L.....Toronto
3 Hopkins, H. R.....Burlington	7 Welsman, T. S.....Toronto
7 Huestis, R. D.....Toronto	

§ Returned soldier reviewing.

**STUDENTS OF OTHER FACULTIES TAKING INSTRUCTION IN
ASSAYING, SURVEYING, ETC.**

Gledhill, T. L.....Kincardine
Hurst, M. E.....Kerrisdale, B.C.
Quinn, Miss E. L.....Kincardine
Stewart, Miss B. H.....Toronto
Thomson, Miss A. E.....New York, N.Y.

Summary.

First Year Students.....	108
Second Year Students.....	61
Third Year Students.....	34
Fourth Year Students.....	33
Students of Other Faculties.....	5
	<hr/>
	241

Special Session.

First Year Students.....	33
Second Year Students.....	27
Third Year Students.....	17
	<hr/>
	77

Scholarship.

Awarded by the Boiler Inspection and Insurance Co. of Canada for General Proficiency in the Third Year in Mechanical Engineering.

1912. A. S. Anderson	1916. A. M. Snider
1914. C. G. Davey	1917. W. D. Robertson
1913. E. D. W. Courtice	1918. T. W. Campbell
1915. L. L. Youell	

Degree of Master of Applied Science (M.A.Sc.).

1915. Avery, C. R.	1915. Parkinson, N. F.
1916. Dobson, W. P.	1915. Robertson, C. S.
1914. Murdie, W. C.	1915. Rolfson, O.
1916. Parker, G. C.	1915. Treloar, G. E.

PROFESSIONAL DEGREES AWARDED SINCE 1910.

Degree of Civil Engineer (C.E.).

1915. Bennett, G. A.	1913. Marrs, C. H.
1915. Challies, J. B.	1915. Smith, A.
1913. Dallyn, F. A.	1917. Smith, W. C.
1915. Davison, A. E.	1915. Stayner, D. S.
1914. Gillespie, P.	1918. Sutherland, C. C.
1914. Hill, S. N.	1911. Swan, W. G.
1914. Hogg, T. H.	1917. Taylor, Thos.
1913. James, E. A.	1917. Townsend, C. J.
1916. Johnston, C.	1916. Watson, M. B.
1916. Johnston, J. T.	1914. Young, C. R.

Degree of Mining Engineer (M.E.).

1912. Burwash, L. T.	1910. McMillan, J. G.
1915. Campbell, A. D.	1915. Neilly, B.
1913. Forbes, D. L. H.	

Degree of Mechanical Engineer (M.E.).

1916. Acres, H. G.	1913. Manson, G. J.
1915. Campbell, A. M.	1913. Smart, R. S.
1913. Christie, A. G.	1918. Watson, M. B.
1913. Darling, E. H.	

Degree of Electrical Engineer (E.E.).

1913. Mitchell, P. H.	1914. Sara, R. A.
1915. Palmer, C. E.	

GRADUATES.

Graduates are requested to inform the Secretary of changes in their addresses.

Graduating departments are represented as follows:

1. Civil Engineering.
2. Mining.
3. Mechanical.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical.
8. Metallurgical.

Up to and including 1911, three represented the combined departments of Mechanical and Electrical Engineering.

1881.

1. J. L. MORRIS, C.E., O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.

1882.

1. D. JEFFREY, Windsor, Missouri
Contractor.
1. J. H. KENNEDY, C.E., O.L.S., Vancouver, B.C.
Chief Engineer, Vancouver, Victoria and Eastern Ry.
1. J. McAREE, B.A.Sc., D.T.S. (deceased).

1883.

1. D. BURNS, O.L.S., A.M.E.I.C. (deceased).
1. G. H. DUGGAN, M.E.I.C., Lachine, Que.
Vice-President and Chief Engineer, Dominion Bridge Co., Ltd.
1. J. W. TYRRELL, C.E., D.L.S., Hamilton, Ont.
Tyrrell & MacKay, Consulting Engineers and Surveyors.

1884.

1. W. C. KIRKLAND (deceased).
1. J. MCDUGALL, B.A. (deceased).
1. A. R. RAYMER, Pittsburgh, Pa.
Assistant Chief Engineer, P. & L. E. Ry.
1. JAMES ROBERTSON, O.L.S., Toronto, Ont.
Commissioner, The Canada Co.
1. E. W. STERN, M.-Am. Soc. C.E.,
On Overseas Service.

1885.

1. J. F. BLEAKLEY, Bowmanville, Ont.
Civil Engineer.
1. H. J. BOWMAN, D. & O.L.S., M.E.I.C., Kitchener, Ont.
Bowman & Connor.
1. E. E. HENDERSON, O.L.S., Henderson P.O., Me.
Civil Engineer.
1. B. A. LUDGATE, O.L.S., Pittsburgh, Pa.
Assistant Engineer, P. & L. E. Ry.
1. O. MCKAY, O.L.S., Walkerville, Ont.
Civil Engineer and Surveyor.

1886.

1. A. M. BOWMAN, D.L.S., Pittsburgh, Pa.
Pennsylvania Contracting Co.
1. E. B. HERMON, D. & O.L.S., Vancouver, B.C.
Assistant Engineer Vancouver Power Co.
1. ROBERT LAIRD, O.L.S., Haileybury, Ont.
Laird & Routley, Engineers and Surveyors.
1. T. KENNARD THOMSON, D.Sc., C.E., M.E.I.C., M.Am.Soc. C.E.,
Consulting Engineer. Hudson Terminal Building, New York
1. H. G. TYRRELL, C.E., A.M.E.I.C.,
Consulting Engineer. 817 Hinman Ave., Evanston, Ill.

1887.

1. J. C. BURNS (deceased).
1. A. E. LOTT, Los Angeles, Cal.
Consulting Railway Engineer.
1. A. L. McCULLOUGH, O.L.S., B.C.L.S., A.M.E.I.C., Nelson, B.C.
Engineer and Surveyor.
1. F. MARTIN, M.B., O.L.S.,
Physician.
1. C. H. PINHEY, D. & O.L.S., 110 Wellington St., Ottawa, Ont.
1. J. ROGERS, O.L.S., Mitchell, Ont.
Town Engineer.

1888.

1. J. F. APSEY, O.L.S., 3 N. Calvert St., Baltimore, Md.
Assistant Division Engineer, Baltimore Sewerage Commission.
1. W. T. ASHBRIDGE, C.E., 1444 Queen St. E., Toronto, Ont.
Engineer and Surveyor.
1. EDWARD F. BALL, A.M.E.I.C., 335 Madison Ave., New York, N.Y.
*Chief Assistant Engineer of Resurveys, Land and Tax Department,
N. Y. Central and Hudson River Railroad.*
1. D. B. BROWN, O.L.S., Quebec, P.Q.
Locating Engineer, Transcontinental Ry. (G.T.P.)
1. C. M. CANNIFF, Toronto, Ont.
Department of Soldiers' Civil Re-establishment.
1. H. J. CHEWETT, B.A.Sc., C.E., A.M.E.I.C., Cold Ash, Newbury, England
1. J. GIBBONS, D. & O.L.S., Ottawa, Ont.
Surveying Staff, Department of Interior.
1. R. McDOWALL, O.L.S., C.E., A.M.E.I.C. Owen Sound, Ont.
Town Engineer.
1. G. W. MCFARLEN, O.L.S., Toronto, Ont.
City Engineer's Staff.
1. C. J. MARANI, Anacortes, Wash.
Designing and Consulting Structural Engineer for the Russia Cement Co.
1. G. R. MICKLE, B. A., Toronto, Ont.
Mine Assessor, Province of Ontario.
1. J. H. MOORE, O.L.S., Smith's Falls, Ont.
Town Engineer.
1. G. H. RICHARDSON, 21 Dunvegan Rd., Toronto, Ont.

1888—Continued.

1. K. ROSE, Curry Bldg., Toronto, Ont.
Manager, Evans Rotary Engine Co. of Canada.
1. J. E. ROSS, D. & O.L.S., Kamloops, B.C.
Surveying Staff, Department of Interior.
1. C. H. C. WRIGHT, B.A.Sc., Toronto, Ont.
Professor of Architecture, University of Toronto.

1889.

1. B. CAREY, Toronto, Ont.
1. W. J. CHALMERS, Vanport, Beaver Co., Pa.
1. W. A. CLEMENT, M.E.I.C., South Vancouver, B.C.
Municipal Engineer.
1. G. F. HANNING, Toronto, Ont.
Divisional Engineer, C.N.R.
1. H. E. T. HAULTAIN, C.E., Assõ. Mem., I.C.E., M.I.M.M., M.E.I.C., Toronto, Ont.
Professor of Mining Engineering, University of Toronto.
1. J. IRVINE (deceased).
1. D. D. JAMES, B.A., B.A.Sc., 6 Leuty Ave., Toronto, Ont
Surveyor.
1. F. X. MILL (deceased).
1. H. K. MOBERLEY, D. & S.L.S., Yorkton, Sask.
District Engineer and Surveyor.
1. T. R. ROSEBRUGH, M. A., Toronto, Ont.
Professor of Electrical Engineering, University of Toronto.
1. T. WICKETT, M.D., 25 Nightingale St., Hamilton, Ont.
Physician.

1890.

5. W. E. BOUSTEAD (deceased).
1. F. M. BOWMAN, O.L.S., C.E., Pittsburgh, Pa.
Blaw Steel Const. Co.
1. M. A. BUCKE, M.E. (deceased).
1. G. D. CORRIGAN (deceased).
1. J. A. DUFF, B.A. (deceased).
1. A. B. ENGLISH (deceased).
1. N. L. GARLAND, 76 Wellington St. W., Toronto, Ont.
1. J. HUTCHEON, O.L.S., Parliament Bldgs., Toronto, Ont.
Dept. of Lands, Forests and Mines.
1. W. L. INNES, O.L.S., C.E., Simcoe, Ont.
Manager, Dominion Cannery, Ltd.
1. E. B. MERRILL, B.A., B.A.Sc., M.E.I.C., M. Am. Inst. E.E., Toronto, Ont.
Engineer, H.E.P.C.
1. J. R. PEDDER (deceased).
3. R. A. ROSS, E.E., 80 St. Francois Xavier St., Montreal, Que.
Consulting Electrical and Mechanical Engineer.
1. T. H. WIGGINS, O.L.S., Saskatoon, Sask.
Civil Engineer and Dom. Land Surveyor.
1. W. J. WITHROW (died while on Active Service, 1917).

1891.

1. H. J. BEATTY, O.L.S., Pembroke, Ont.
Engineer and Surveyor.
1. T. R. DEACON, O.L.S., M.E.I.C., Winnipeg, Man.
President and General Manager, Manitoba Bridge & Iron Works, Ltd.
1. C. W. DILL, M.E.I.C., Winnipeg, Man.
Superintendent of Highways, Province of Manitoba.
5. O. S. JAMES, B.A.Sc., 6 Leuty Ave., Toronto, Ont.
1. A. LANE (deceased).
1. J. E. McALLISTER, B.A.Sc., C.E., Hamilton, Ont.
Gen. Mgr. National Steel Car Co.
3. E. B. MERRILL, B.A., B.A.Sc., M.E.I.C., M. Am. Inst. E.E.,
Engineer, H.E.P.C. Toronto, Ont.
1. J. E. A. MOORE, C.E., Cleveland, O.
Marani & Moore, Civil and Mechanical Engineers.
1. W. NEWMAN, O.L.S., A.M.E.I.C., Winnipeg, Man.
Consulting Engineer and Contractor.
1. J. K. ROBINSON (deceased).
1. W. B. RUSSEL, 601 Standard Bank Bldg., Toronto, Ont.
Civil Engineer and Contractor.
1. G. E. SILVESTER, O.L.S., M. Am. Inst. M.E., Copper Cliff, Ont.
Chief Engineer, Canadian Copper Co.
1. H. D. SYMMES, Niagara Falls S., Ont.
Engineer and Contractor.

1892.

1. J. R. ALLAN, O.L.S., Renfrew, Ont.
1. T. H. ALISON, B.A.Sc., C.E., Bayonne, N.J.
Secretary and Chief Engineer, Bergen Point Iron Works.
1. A. G. ANDERSON, Port Dover, Ont.
Hardware Merchant.
1. C. FAIRCHILD, D. & O.L.S., 608 Tegler Blk., Edmonton, Alta.
Consulting Engineer and Surveyor.
1. J. B. GOODWIN, B.A.Sc., Niagara Falls, Ont.
Works Engineer, H.E.P. Development.
4. C. E. LANGLEY, Continental Life Bldg., Toronto, Ont.
Langley & Howland, Architects.
1. A. T. LAING, B.A.Sc., Toronto, Ont.
Secretary and Assistant Professor, Faculty of Applied Science, University of Toronto.
1. E. J. LASCHINGER, B.A.Sc., M.E., Johannesburg, Transvaal, S.A.
Hydraulic and Air Power Engineer, Central Mining and Investment Corporation.
5. W. L. LAWSON, B.A.Sc., Billings, Mont.
Asst. Gen. Manager, Great Western Sugar Co.
3. W. A. LEE, B.A.Sc. (deceased).
1. B. McENTER, B.A.Sc., 28 Queen St. E., Toronto, Ont.
Stationer.
3. C. G. MILNE, B.A.Sc. (deceased).
1. CHAS. H. MITCHELL, B.A.Sc., C.E., M.E.I.C., M. Am. Soc. C.E.,
On Overseas Service. Brigadier-General
Vancouver, B.C.
1. N. L. PLAYFAIR,
1. J. M. PRENTICE (deceased).
1. J. A. ROSS, Cleveland, Ohio
Designer L. S. & M. S. Railway, Engineering Office.

1892—Continued.

- | | |
|---|------------------|
| 1. ALBERT N. SMITH,
<i>Engineer, Wm. B. Pollock Co.</i> | Youngstown, Ohio |
| 1. R. W. THOMSON, B.A.Sc., M.E.,
<i>Dist. Mining Engineer for B.C.</i> | Kamloops, B.C. |
| 3. A. V. WHITE, M.E.,
<i>Engineer, Commission of Conservation.</i> | Ottawa, Ont. |

1893.

- | | |
|--|-----------------------------------|
| 1. A. G. ARDAGH,
<i>Land Surveyor and Civil Engineer.</i> | Barrie, Ont. |
| 4.*H. F. BALLANTYNE, B.A.Sc.,
<i>Architect.</i> | 2 West 47th St., New York, N.Y. |
| 1. G. L. BROWN, O.L.S., A.M.E.I.C.,
<i>Civil Engineer and Land Surveyor.</i> | Morrisburg, Ont |
| 1.*L. C. CHARLESWORTH, D.L.S., -
<i>Deputy Minister of Public Works.</i> | Edmonton, Alta. |
| 1. T. H. DUNN, D. & O.L.S., M.E.I.C.,
<i>Water Power Branch, Dept. of the Interior.</i> | Ottawa, Ont. |
| 1. J. M. R. FAIRBAIRN, P.L.S.,
<i>Assistant Chief Engineer, C. P. R.</i> | Westmount, Que. |
| 4.*W. FINGLAND,
<i>Architect.</i> | 334 Portage Ave., Winnipeg, Man. |
| 1. C. FORRESTER, | Toronto, Ont. |
| 1.*WALTER J. FRANCIS, C.E., M.E.I.C., M. Am. Soc. C.E.,
<i>Walter J. Francis & Co., Consulting Engineers.</i> | 260 St. James St., Montreal, Que. |
| 3.*A. R. GOLDIE,
<i>Manager, Goldie & McCulloch Co.</i> | Galt, Ont. |
| 3. S. C. HANLY,
<i>Midland Iron Works Co.</i> | Midland, Ont. |
| 4.*J. KEELE, A.M., B.A.Sc.,
<i>Ceramic Engineer, Dept. of Mines.</i> | Ottawa, Ont. |
| 1. J. T. LAIDLAW, B.A.Sc., M.E.,
<i>Consulting Mining Engineer.</i> | Cranbrook, B.C. |
| 3. F. L. LASH,
<i>Manager, Electrical Supply Co., Board of Trade Building.</i> | Bandoeng, Java |
| 1. A. L. McALLISTER, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. T. J. MCFARLEN,
<i>Chemist, Antikokan Iron Co.</i> | Port Arthur, Ont. |
| 1. A. J. MCPHERSON, B.A.Sc., D.L.S.,
<i>Deputy Minister of Public Works for Sask.</i> | Regina, Sask. |
| 1. A. F. MACALLUM, B.A.Sc., C.E.,
<i>Commissioner of Works.</i> | Ottawa, Ont. |
| 1. W. T. MAIN,
<i>Division Engineer, C. & N. W. Ry.</i> | Silverton, Oregon |
| 1. V. G. MARANI, C.E.,
<i>Marani & Moore, Civil and Mechanical Engineers.</i> | Cleveland, Ohio |
| 1. W. MINES, B.A.Sc.,
<i>Mechanical Engineer, Hoover & Mason.</i> | Chicago, Ill. |
| 3.*J. M. ROBERTSON,
<i>Consulting Engineer.</i> | Montreal, P.Q. |

*Diploma with honours.

1893—Continued.

1. R. K. RUSSEL, 1001 Traders' Bank Bldg., Toronto, Ont.
Railway Contractor.
- 1.*F. N. SPELLER, B.A.Sc., Pittsburgh, Pa.
Metallurgical Engineer, National Tube Co.
1. H. R. SQUIRE, B.A.Sc., O.L.S. (deceased).
1. W. V. TAYLOR, O.L.S., A.M.E.I.C., Quebec, P.Q.
Quebec Harbour Commissioners.
- 1.*R. B. WATSON (deceased).

1894.

- 3.*R. W. ANGUS, B.A.Sc., Mem. Am. Soc. M.E. Toronto, Ont.
Professor of Mechanical Engineering, University of Toronto.
1. H. F. BARKER, Toronto, Ont.
1. A. T. BEAUREGARD, B.A.Sc., Darien, Conn.
1. A. E. BERGEY, Pittsburgh, Pa.
Assoc. Professor, Carnegie Inst. of Technology.
3. D. G. BOYD, Toronto, Ont.
Department of Lands and Mines, Parliament Buildings.
3. W. A. BUCKE, Toronto, Ont.
District Manager, Canadian General Electric Co.
1. J. CHALMERS, O.L.S., A.M.E.I.C., Edmonton, Alta.
Consulting Engineer, 13012 104th Avenue.
- 4.*J. A. EWART, B.A.Sc., 415 Booth Bldg., Ottawa, Ont.
Architect.
3. W. J. HERALD, B.A.Sc., 190 Whitney Ave., Sydney, N.S.
3. H. E. JOB, B.A.Sc., Hamilton, Ont.
Manager, Toronto and Hamilton Electric Co.
1. S. M. JOHNSON, B.A.Sc., B.C.L.S.
On Overseas Service.
3. A. C. JOHNSTON, B.A.Sc., M.E., Philadelphia, Pa.
Vice-President and Chief Engineer, The J. M. Dodge Co.
1. J. E. JONES, Toronto, Ont.
Street Cleaning Dept., City Hall.
3. N. M. LASH, Montreal, P.Q.
Chief Engineer, Bell Telephone Co.
- 1.*A. L. McTAGGART, B.A.Sc., 703 Arch St., Pittsburg, Pa.
Mechanical Engineer.
- 3.*W. MINTY, B.A.Sc., Blackburn, Eng.
With Messrs. Yates & Thom, Ltd., Engineers.
- C. J. NICHOLSON, Hamilton, Ont.
Assistant Engineer, Toronto, Hamilton & Buffalo Ry.
1. H. ROLPH, Montreal, Que.
Chief Engineer, John S. Metcalf Co., Ltd.
1. J. D. SHIELDS, B.A.Sc., Toronto, Ont.
Sewer Engineer, Staff of City Engineer.
1. ANGUS SMITH, C.E., O.L.S., A.M.E.I.C., Prince Albert, Sask.
City Engineer.
3. A. K. SPOTTON, Galt, Ont.
Chief Engineer, Goldie & McCulloch Engine Works.
3. R. T. WRIGHT, B.A.Sc., East Pittsburgh, Pa.
Engineering Department, Westinghouse Machine Co.

*Diploma with honours.

1895.

1. J. ARMSTRONG, B.A.Sc., LePas, Man.
Chief Engineer of the Hudson Bay Ry.
3. A. E. BLACKWOOD, 30 Church St., New York
Manager, New York Office, Sullivan Machinery Co.
1. E. J. BOSWELL, D.L.S., Montreal, Que.
With C. P. R.
3. G. BREBNER (deceased).
3. W. M. BRODIE, B.A.Sc.,
On Overseas Service.
3. L. L. BROWN, The Woolworth Bldg., New York
Vice-President, The Foundation Co.
4. R. J. CAMPBELL, Chicago, Ill.
Artist, Chicago Tribune.
3. A. W. CONNOR, B.A., C.E., 36 Toronto St., Toronto, Ont.
Bowman & Connor, Consulting Engineers.
1. J. S. DOBIE, B.A.Sc., O. & D.L.S., Thessalon, Ont.
President, O. L. S. Assoc.
1. F. W. GUERNSEY, Trail, B.C.
Consolidated Mining and Smelting Co.
- 4.*A. H. HARKNESS, B.A.Sc., Confederation Life Bldg., Toronto, Ont.
Consulting Structural Engineer, Harkness & Oxley.
3. H. S. HULL, B.A.Sc., Johnstown, Pa.
Structural Drawing, Cambria Steel Co.
- 3.*J. MCGOWAN, B.A., B.A.Sc., Toronto, Ont.
Professor of Applied Mechanics, University of Toronto.
3. W. N. MCKAY, Georgetown, Ont.
Manager of Bank of Hamilton.
3. H. L. MCKINNON, B.A.Sc., Cleveland, Ohio
Brown Hoisting Machinery Co.
1. W. W. MEADOWS, D. & O.L.S., Maple Creek, Sask.
Department of Public Works.
1. F. J. ROBINSON, D. & O.L.S. (deceased).
3. F. T. STOCKING, Toronto, Ont.
Hydro-Electric Commission.
3. R. C. C. TREMAINE, B.A.Sc. (deceased).

1896.

- 2.*J. W. BAIN, B.A.Sc., Toronto, Ont.
Professor of Chemical Engineering, University of Toronto.
2. L. T. BURWASH, M.E.,
On Overseas Service.
- 3.*G. M. CAMPBELL, Lynn, Mass.
Electric Co.
2. J. A. DECEW, B.A.Sc., McGill Bldg., Montreal, Que.
Chemical Engineer.
- 3.*H. P. ELLIOTT, B.A.Sc., E.E., London, Ont.
Consulting Electrical Engineer.
3. W. C. GURNEY, Toronto, Ont.
Vice-President, Gurney Foundry Co., Ltd.
- 3.*H. V. HAIGHT, B.A.Sc., Sherbrooke, P.Q.
Chief Engineer, Canadian Ingersoll Rand Drill Co. Ltd.

*Diploma with honours.

1896—Continued.

1. W. F. LAING (deceased).
3. R. R. LAWRIE (deceased).
3. C. MACBETH, B.A.Sc. (deceased).
3. J. A. MACMURCHY, 1315 Elm St., Wilkinsburg, Pa.
Chief Draftsman, Turbine Dept., Westinghouse Machine Co.,
1. T. MARTIN, B.A.Sc. Moose Jaw, Sask.
Assistant Divisional Engineer, C. P. R., Western Division.
3. R. R. SCHEIBE, Toronto, Ont.
Sales Manager, Brigdens, Ltd.

1897.

2. E. ANDREWES, B.Sc., A.M.I.C.E., Portmadoc, N. Wales.
Resident Engineer, Maenofferen Slate Quarry Co., Ltd.
- 2.*J. A. BOW, Chanaral, Chili, S. America.
c/o Andes Copper Mining Co.
1. H. S. CARPENTER, B.A.Sc., O.L.S., Regina, Sask.
Superintendent of Highways, Department of Public Works.
5. H. W. CHARLTON, B.A.Sc., New York, N.Y.
Patent Expert.
- 4.*E. A. FORWARD, A.M.E.I.C., Montreal, Que.
With Haney, Quinlan & Robertson.
- 3.*A. T. GRAY, B.A.Sc., Schenectady, N.Y.
Designing Engineer on Steam Turbines, General Electric Co.
3. W. A. B. HICKS, Philadelphia, Pa.
4. C. F. KING, 356 Main St., Winnipeg, Man.
The Great West Perm. Loan Co.
1. H. W. PROUDFOOT (deceased).
- 2.*A. H. A. ROBINSON, B.A.Sc., M.A.I.M.E., Ottawa, Ont.
Mining Engineer, Department of Mines.
4. W. F. SCOTT, Dunnville, Ont.
Structural Engineer and Consulting Architect.
- 3.*W. R. SMILEY, B.A.Sc., Cleveland, Ohio.
With Wellman-Seaver-Morgan Engineering Co.
- 2.*W. W. STULL, B.A.Sc., O.L.S., Sudbury, Ont.
Surveyor and Mining Engineer.
- 1.*M. B. WEEKES, B.A.Sc., D.L.S., Regina, Sask.
Department of Public Works.
1. E. A. WELDON, 711 McIntyre Block, Winnipeg, Man.
Investment Broker.

1898.

1. W. H. BOYD, B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.
2. W. E. H. CARTER, B.A.Sc., Box 248, Wilkie, Sask.
Consulting Mining Engineer.
3. E. H. DARLING, M.E., A.M.E.I.C., Hamilton, Ont.
Resident Engineer, East Hamilton Plant, Hamilton Bridge Works Co.
1. W. F. GRANT, B.A.Sc. (deceased).
1. J. S. KORMANN, B.A.Sc., Toronto, Ont.
Manager, Kormann Brewing, Ltd.

*Diploma with honours.

1898—Continued.

3. J. E. LAVROCK, Vancouver, B.C.
Draftsman, Hermon & Burwell.
4. D. MACKINTOSH, B.A.Sc., B.Arch., Bennington, Vt.
Chief Superintendent F. M. Andrews & Co., Metropolitan Tower.
- 1.*F. W. MCNAUGHTON, O.L.S., Calgary, Alta.
C.P.R., Dept. of Natural Resources.
1. J. H. SHAW, O.L.S., North Bay, Ont.
Surveyor and Engineer.
3. A. E. SHIPLEY, B.A.Sc., Nelson, B.C.
Manager, Nelson Coke & Gas Co.
- 3.*F. C. SMALLPIECE, B.A.Sc., 122 Eleventh Ave. W., Calgary, Alta.
Chief Engineer, General Supplies Co.
- 1.*R. W. SMITH, P.L.S. (killed in action, France, 1916).
- 1.*J. A. STEWART, M.A., Toronto, Ont.
Chief Engineer, Toronto Structural Steel Co.
- 1.*H. L. VERCOE, 109 McCaul St., Toronto, Ont.
3. T. A. WILKINSON, New York, N.Y.
Statistician, Westinghouse Church Kerr Co.
3. D. A. WILLIAMSON, B.A.Sc., Ottawa, Ont.
Structural Steel Engineer, Dept. of Public Works.

1899.

- 3.*T. BARBER, Meaford, Ont.
Hydraulic Engineer, Chas. Barber & Sons.
2. J. T. M. BURNSIDE, B.A.Sc. (deceased).
3. L. B. CHUBBUCK, B.A.Sc., E.E., Hamilton, Ont.
Engineer, Canadian Westinghouse Co.
2. G. A. CLOTHIER, Stewart, B.C.
Mining Engineer and Surveyor.
1. C. COOPER, Carlyle, Sask.
2. R. W. COULTHARD, B.A.Sc., Toronto, Ont.
Department Soldiers' Civil Re-establishment.
3. J. A. CRAIG, B.A.Sc., Toronto, Ont.
Office of Willis Chipman, C.E.
2. J. C. ELLIOTT, Kelso, Ont.
3. W. E. FOREMAN, B.A.Sc., Pittsburgh, Pa.
Construction Dept., Westinghouse Electric and Mfg. Co.
3. E. GUY, B.A.Sc., Toronto, Ont.
- 3.*W. ALMON HARE, B.A.Sc., A.M.E.I.C., Toronto, Ont.
President, The Hare Engineering Co.
1. R. LATHAM, B.A.Sc., Hamilton, Ont.
Chief Engineer, T. H. & B. Ry.
3. W. MONDS, B.A.Sc.,
On Overseas Service.
1. J. PATTERSON, B.A., Toronto, Ont.
Physicist, Dominion Observatory.
3. A. S. H. POPE, B.A.Sc., Portland, Oregon
Pope & Wilcox, Electrical and Mechanical Engineers.

*Diploma with honours.

1899—Continued.

2. G. E. REVELL, B.A.Sc. (killed in action, France, 1915).
 3.*E. RICHARDS, B.A.Sc., Ottawa, Ont.
Customs Appraiser.
 3. G. A. SAUNDERS, Toronto, Ont.
Asst. Engineer, Hydro-Electric Commission.
 1.*T. SHANKS, B.A.Sc., D.L.S., Ottawa, Ont.
Assistant Surveyor-General, Department of the Interior.
 1.*D. C. TENNANT, B.A.Sc., Montreal, Que.
Struc. Eng., Dom. Bridge Co.
 3. W. W. VANEVRY, Sault Ste. Marie, Ont.
City Engineer.
 3. W. E. WAGNER, B.A.Sc., Springfield, Ill.
Manager, Smokeless Powder Division, Western Cartridge Co.
 2. G. H. WATT, D.L.S., Ottawa, Ont.
Dominion Land Surveyor.
 3. E. YEATES, London, Ont.
Manager, London Manufacturing and Machine Co.

1900.

1. J. L. ALLAN, M.E.I.C., Dartmouth, N.S.
Secretary, Dartmouth Development Co.
 2. E. G. R. ARDAGH, B.A.Sc., Toronto, Ont.
Asst. Professor of Applied Chemistry, University of Toronto.
 3. J. A. BAIN (deceased).
 3. J. H. BARLEY, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Electric and Manufacturing Co.
 2.*M. C. BOSWELL, M.A., Ph.D., Toronto, Ont.
Assoc. Professor of Organic Chemistry, University of Toronto.
 1. L. T. BRAY, D. & O.L.S., Edmonton, Alta.
District Engineer.
 3. J. CLARK, Toronto, Ont.
Turnbull Elevator Mfg. Co.
 2. J. E. DAVISON, B.A.Sc., Winnipeg, Man.
Engineering Staff, Canadian Northern Ry.
 3. E. D. DICKINSON, Schenectady, N.Y.
With General Electric Co.
 3. G. W. DICKSON, B.A.Sc., Hawkesbury, Ont.
With Riordan Pulp & Paper Co.
 2.*H. A. DIXON, B.A.Sc., M.L.S., Jasper, Alta.
District Engineer, Canadian Northern Railway.
 2. C. H. FULLERTON, O.L.S., New Liskeard, Ont.
Engineer and Surveyor.
 3. W. S. GUEST, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.
 3. W. HEMPHILL, B.A.Sc., E.E., Buffalo, N.Y.
Superintendent, Cataract Power & Conduit Co.
 2. S. E. M. HENDERSON, Toronto, Ont.
Canadian General Electric Co.
 3. J. A. HENRY, Schenectady, N.Y.
Designing Engineer, General Electric Co.

*Diploma with honours.

1900—Continued.

2. H. S. HOLCROFT, B.A.Sc., D.L.S. (Died of wounds received in action, France, 1916).
3. H. A. JOHNSON, Toronto, Ont.
3. J. C. JOHNSTON, Boston, Mass.
Plant Inspector, Warren Bituminous Paving Co.
- 2.*J. A. JOHNSTON, B.A.Sc., Ignace, Ont.
Contractor.
2. R. E. MCARTHUR, Lethbridge, Alta.
2. J. G. McMILLAN, B.A.Sc., M.E.,
On Overseas Service.
3. L. HAUN MILLER, Cleveland, Ohio
Sales Agent, Bethlehem Steel Co.
2. E. V. NEELANDS, B.A.Sc., New Guiana, S. America
Manager, Peters Mines.
- 1.*E. H. PHILLIPS, D.L.S., Saskatoon, Sask.
Phillips & Phillips, Civil Engineers and Surveyors.
2. J. R. ROAF, B.A.Sc.,
On Overseas Service.
- 3.*C. H. E. ROUNTHWAITE, Sault Ste. Marie, Ont.
Chief Draftsman, Algoma Central & Hudson Bay Ry.
2. H. W. SAUNDERS, B.A.Sc., Gary, W.Va.
Division Engineer, U. S. Coal & Coke Co.
1. A. TAYLOR, D. & M.L.S., Portage la Prairie, Man.
Engineer and Surveyor.
1. W. C. TENNANT, B.A.Sc. (deceased).
2. S. M. THORNE, B.A.Sc.,
On Overseas Service.
1. F. W. THOROLD, B.A.Sc., M.E.I.C., 2 Toronto St., Toronto.
F. W. Thorold Co., Ltd., Consulting Engineers and Contractors. [Ont.
1. H. M. WEIR, B.A.Sc., Saskatoon, Sask.
City Engineer's Office.
3. F. D. WITHROW, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.

1901.

1. R. H. BARRETT, B.A.Sc., O.L.S. (deceased).
3. W. G. BEATTY, Fergus, Ont.
Manager, Beatty Bros., Implement Manufacturers.
3. G. M. BERTRAM, Toronto, Ont.
Business Manager, Canadian Courier.
3. W. J. BOWERS (deceased).
3. E. T. J. BRANDON, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Com.
3. W. P. BRERETON, B.A.Sc., Winnipeg, Man.
City Engineer.
3. J. T. BROUGHTON, Columbus, Ohio.
Gen. Mgr., Factory Sales Co.
- 3.*W. G. CHACE, B.A.Sc., Winnipeg, Man.
Chief Engineer, Greater Winnipeg Water District.
3. A. G. CHRISTIE, M.E., Baltimore, Md.
Assoc. Professor of Mechanical Engineering, Johns Hopkins University

*Diploma with honours.

1901—Continued.

3. J. R. COCKBURN, B.A.Sc., A.M.E.I.C., Toronto, Ont
Associate Professor of Descriptive Geometry, University of Toronto.
1. W. A. DUFF, Moncton, N.B.
Engineer of Bridges, Intercolonial Ry.
- 2.*D. E. EASON, B.A.Sc., Peterboro', Ont.
Division Engineer, Trent Valley Canal.
- 1.*S. GAGNE, B.A.Sc. (deceased).
3. N. R. GIBSON, B.A.Sc., 550 Confederation Life Bldg., Toronto, Ont.
2. A. T. E. HAMER, Wahnapiatae, Ont.
Engineering Staff, Canadian Northern Ry. Co.
1. C. HARVEY, B.A.Sc., D.L.S., C.E., B.C.L.S. Kelowna, B.C.
Consulting Engineer and Surveyor.
2. F. C. JACKSON, Seaforth, Ont.
- 3.*R. A. LAIDLAW, C.E. Houston, Texas
Engineer and Sales Agent, Trussed Concrete Steel Co.
3. W. C. LUMBERS, Calgary, Alta.
Engineering Staff, C. P. R.
2. A. C. MACDOUGALL,
On Overseas Service.
3. A. T. C. McMASTER, B.A.Sc., Toronto, Ont.
Engineer and Contractor.
1. G. MACMILLAN, Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
- 3.*H. G. McVEAN, B.A.Sc., 3120 Rae Street, Regina, Sask.
2. W. C. MATHESON, Joliette, Que.
With Mackenzie-Mann & Co.
3. H. T. MIDDLETON, Englewood Cliffs, N.J.
2. J. L. R. PARSONS, B.A., D.L.S.,
On Overseas Service.
1. G. H. POWER, Winnipeg, Man.
Western Canada Rep. of Willis Chipman, C.E.
- 3.*H. W. PRICE, B.A.Sc., Toronto, Ont.
Associate Professor of Electrical Engineering, University of Toronto
1. H. P. RUST, B.A.Sc., A.M.E.I.C., Philadelphia, Pa.
Plant Engineer, Wm. Cramps, Ltd.
3. M. V. SAUER, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Greater Winnipeg Water District.
3. W. H. STEVENSON, B.A.Sc., Monadnock Block, Chicago, Ill.
Secretary, Power Plant Specialty Co.
1. R. D. WILLSON (deceased)

1902.

- 3.*H. G. BARBER, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. W. J. BLAIR, B.A.Sc., D. & O.L.S., Calgary, Alta.
3. J. M. BROWN, Pittsburgh, Pa.
With Westinghouse Machine Co., Steam Turbine Dept.

*Diploma with honours.

1902—Continued.

2. W. G. CAMPBELL, Toronto, Ont.
Campbell & Lattimore.
2. A. R. CAMPBELL (deceased).
3. C. G. CARMICHAEL (deceased).
- 2.*W. CHRISTIE, B.A.Sc., Prince Albert, Sask.
Dominion Land Surveyor.
2. F. T. CONLON (deceased).
3. H. V. CONNOR, Hamilton, Ont.
Canadian Westinghouse Co.
- 2.*M. T. CULBERT (deceased).
2. R. CUMMING, Toronto, Ont.
Price, Cumming Brick Co.
1. W. E. DOUGLAS, B.A., 152 Bay St., Toronto, Ont.
Contractor.
- 3.*R. J. DUNLOP, Toronto, Ont.
With Canadian Westinghouse Co.
2. W. M. EDWARDS, B.A.Sc., Lethbridge, Alta.
Duff & Edwards.
3. W. ELWELL (deceased).
2. J. M. EMPEY, B.A.Sc., O. & D.L.S., Calgary, Alta.
Engineer and Surveyor.
- 2.*D. L. H. FORBES, M.E. Chuquicamata, Chili, South America.
Chief Const. Engineer, Chili Exploration Co.
- 1.*A. E. GIBSON, B.A.Sc., Toronto, Ont.
Roger Miller & Sons, Engineers and Contractors.
3. A. C. GOODWIN, Toronto, Ont.
With Hydro-Electric Power Commission.
3. C. P. HENWOOD, McKeesport, Pa.
Draftsman, National Tube Co.
3. D. M. JOHNSTON, Toronto, Ont.
With Hydro-Electric Power Comm.
2. R. H. KNIGHT, B.A.Sc., D.L.S., Edmonton, Alta.
Driscoll & Knight, Engineers and Surveyors.
- 5.*F. L. LANGMUIR, B.A.Sc., Ph.D., Toronto, Ont.
Chemist, M. Langmuir Mfg. Co.
3. A. H. MCBRIDE, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Commission.
1. A. L. MCLENNAN, D.L.S., London, Ont.
Department Soldiers' Civil Re-establishment.
3. J. T. MACKAY, Toronto, Ont.
3. J. F. S. MADDEN, Toronto, Ont.
Canadian General Electric Co.
- 3.*C. H. MARRS, C.E., Hamilton, Ont.
Hamilton Bridge Works.
3. P. MATHISON, B.A.Sc., East Pittsburgh, Pa.
Westinghouse Electric & Manufacturing Co.
3. R. S. MENNIE, Pittsburgh, Pa.
With Crucible Steel Co. of America.
2. H. H. MOORE, D.L.S., A.M.E.I.C., Calgary, Alta.
Dominion Land Surveyor and Engineer.
- 1.*T. S. NASH, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. G. G. POWELL, B.A.Sc., Toronto, Ont.
Assist. City Engineer.

*Diploma with honours.

1902—Continued.

- 1.*W. F. RATZ, D.L.S. (deceased).
 3. H. D. ROBERTSON, B.A.Sc., London, Ont.
Department Soldiers' Civil Re-establishment.
 3.*D. SINCLAIR, B.A.Sc. (deceased).
 2.*I. J. STEELE, D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
 3. W. H. SUTHERLAND, B.A.Sc., Montreal, Que.
Assistant Chief Engineer, Montreal Water and Power Co.
 3.*THOS. TAYLOR, C.E., 494 Concord Ave., Toronto, Ont.
Des. and Const. Engineer, Bloor Street Viaduct.
 2.*C. M. TEASDALE, Concord, Ont.
Surveyor.
 3. A. A. WANLESS, Sydney Mines, N.S.
Asst. Engineer and Shop Supt. N. S. S. & C. Co.
 3. H. J. ZAHN, B.A.Sc., 235 Calumet St., Detroit, Mich.

1903.

3. H. G. ACRES, Toronto, Ont.
Asst. Engineer, Hydro-Electric Power Commission.
 1. J. G. R. ALISON, Pittsburgh, Pa.
With Riter-Conley Mfg. Co.
 3.*H. H. ANGUS, B.A.Sc., Toronto, Ont.
MacMullen, Riley & Durley, Consulting Engineers.
 3. J. A. BEATTY, Peterboro', Ont.
Morrow & Beatty, Contractors.
 3.*J. BRESLOVE, Pittsburgh, Pa.
Allis-Chalmers Co.
 2. J. H. BURD, O., D., S. & A. L. S., C.E., Saskatoon, Sask.
Engineer and Surveyor.
 1.*E. L. BURGESS, D.L.S., Kamloops, B.C.
Burgess & Taggart, Surveyors and Engineers.
 2. N. A. BURWASH, B.A.Sc., 26 Alvin Ave., Toronto, Ont.
 1. F. F. CLARKE, D. & O.L.S., A.M.E.I.C., 137 Sheldrake Blvd., Toronto, Ont.
 2. C. L. COULSON, Welland, Ont.
Chief Engineer.
 3.*A. E. DAVISON, B.A.Sc., C.E., Toronto, Ont.
Engineering Staff, Hydro-Electric Power Commission.
 3. C. J. FENSOM, B.A.Sc., M.E., Hamilton, Ont.
Works Engineer, Otis-Fensom Elevator Co.
 2.*E. O. FUCE, O.L.S., 84 King Street E., Toronto, Ont.
Engineer and Surveyor.
 3.*F. A. GABY, B.A.Sc., Toronto, Ont.
Chief Engineer, Hydro-Electric Power Commission.
 1. J. C. GARDNER, B.A.Sc., Niagara Falls, Ont.
Consulting Engineer.
 3. R. E. GEORGE, Dover, N.H.
Electrical and Gas Engineer, The United Gas & Electric Co.
 1.*P. GILLESPIE, B.A.Sc., C.E., Toronto, Ont.
Associate Professor of Applied Mechanics, University of Toronto.
 1.*W. A. GOURLAY, Victoria, B.C.
Chief Engineer, Dominion Govt.

*Diploma with honours.

1903—Continued.

2. J. F. HAMILTON, B.A.Sc., C.E., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.
2. G. S. HANES, B.A.Sc., O.L.S., North Vancouver, B.C.
2. F. Y. HARCOURT, B.A., Port Arthur, Ont.
Engineer, Public Works Dept.
1. L. J. HAYES, 2434 Niagara Ave., Niagara Falls, N.Y.
- 1.*F. D. HENDERSON, Secy. Board of Examiners for D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
- 5.*J. A. HORTON, Winnipeg, Man.
Chemist, Lever Brothers.
3. J. G. JACKSON, 98 Frontenac St., Kingston, Ont.
3. G. K. JOHNSTON, Pefferlaw, Ont.
Merchant.
1. H. JOHNSTON, O.L.S., Kitchener, Ont.
City Engineer.
3. A. G. LANG, 190 University Ave., Toronto, Ont.
Hydro-Electric Power Commission.
- 1.*A. J. LATORNELL, B.A.Sc. (died of wounds received in action, 1917).
- 1.*H. J. MCAUSLAN, B.A.Sc., O.L.S., North Bay, Ont.
Staff of T. & N. O. Ry.
3. J. A. MCFARLANE, B.A.Sc., Hamilton, Ont.
Chief Draftsman, Hamilton Bridge Works Co.
- 1.*A. L. MCNAUGHTON, Prince Rupert, B.C.
With G. T. P. Co.
- 5.*F. G. MARRIOTT, B.A.Sc., Toronto, Ont.
Chemist and Supt. Asphalt Plant, City Testing Laboratory.
- 3.*C. A. MAUS, Paris, Ont.
- 3.*M. L. MILLER, Pittsburgh, Pa.
Draftsman, McClintic-Marshall Construction Co.
3. P. H. MITCHELL, E.E., Toronto, Ont.
Consulting Electrical Engineer, Traders Bank Building.
- 2.*R. H. MONTGOMERY, B.A.Sc., O. and D.L.S., Prince Albert, Sask.
Engineer and Surveyor.
1. F. A. MOORE, Toronto, Ont.
Engineering Dept. C. N. Ry.
3. E. E. MULLINS, Port Limon, Costa Rica.
Supt. Motive Power, Northern Ry. Co.
3. I. H. NEVITT, B.A.Sc., Toronto, Ont.
Asst. Engineer, Main Drainage Dept., City Hall.
1. E. W. OLIVER, B.A.Sc., C.E., Toronto, Ont.
Assistant to Chief Engineer, Canadian Northern Ry. System.
3. J. P. OLIVER, Saskatoon, Sask.
3. J. D. PACE, B.A.Sc.,
3. B. B. PATTEN, B.A.Sc.,
On Overseas Service.
2. D. H. PHILP, Ottawa, Ont.
Georgian Bay Canal Survey.
- 3.*D. H. PINKNEY, Elyria, O.
National Tube Dept., U. S. Steel Corporation.

*Diploma with honours.

1903—Continued.

2. T. H. PLUNKETT, B.A.Sc., Meaford, Ont.
Dominion Land Surveyor.
1. D. F. ROBERTSON, D.L.S.,
On Overseas Service.
- 3.*H. M. SCHEIBE, B.A.Sc., 10 Adelaide Rd., Somerville, Mass.
Supt., E. F. Delisle Co.
- 1.*H. L. SEYMOUR, B.A.Sc., D.L.S., Box 151, Ottawa, Ont.
Sanitary Engineer.
1. J. H. SMITH, D. & O.L.S., 140 Jasper Ave. West, Edmonton, Alta.
Engineer and Surveyor.
3. H. G. SMITH, B.A.Sc. (deceased).
3. S. L. TREES, B.A.Sc., Whitby, Ont.
Manager, Samuel Trees & Co.
2. J. E. UMBACH, Victoria, B.C.
Surveyor General, British Columbia.
1. J. WALDRON, D.L.S., Moose Jaw, Sask.
Engineer and Surveyor.
- 3.*S. B. WASS, Fredericton, N.B.
Supt. St. John & Quebec R.R.
3. J. A. WHELIHAN, Box 165, Regina, Sask.
3. H. F. WHITE,
On Overseas Service.
- 2.*C. G. WILLIAMS, B.A.Sc., Timmins, Ont.
Supt., Hollinger Consolidated Gold Mines, Ltd.
- 1.*N. D. WILSON, B.A.Sc., Toronto, Ont.
Toronto Harbour Commission.
- 1.*C. R. YOUNG, B.A.Sc., C.E., M.E.I.C., Toronto, Ont.,
Asst. Professor in Structural Engineering, University of Toronto.

1904.

- 3.*J. H. ALEXANDER, B.A., C.E., A. M. Am. Soc. C.E., Winnipeg, Man.
Engineer and Contractor.
- 3.*J. H. BARRETT, Toronto, Ont.
With the Wm. Davies Co., Ltd.
3. M. B. BONNELL, Sanitarium, Ont.
3. T. D. BROWN, B.A.Sc., Calgary, Alta.
Canadian Fairbanks Co.
1. R. J. BURLEY, Ottawa, Ont.
Dept. of the Interior.
3. F. W. BURNHAM, B.A.Sc.,
On Overseas Service.
3. J. W. CALDER, B.A.Sc., Fort William, Ont.
With Hydro-Electric Commission.
1. N. C. CAMERON, 4172 Dorchester St., Montreal, Que.
Dominion Engineering and Construction Co.
1. A. J. CAMPBELL, B.A.Sc., Collingwood, Ont.
- 3.*A. M. CAMPBELL, B.A.Sc., M.E., Weston, Ont.
Erection Engineer, Toronto Structural Steel Co.
4. J. B. CHALLIES, C.E., Ottawa, Ont.
Hon. Rec. Sec., Honorary Advisory Council for Scientific and Industrial Research.
2. C. A. CHILVER, Walkerville, Ont.

*Diploma with honours.

1904—Continued.

2. H. L. CHILVER,
On Overseas Service.
1. U. W. CHRISTIE, B.A.Sc., O.L.S.,
Wheelock & Christie, Civil Engineers. Orangeville, Ont.
2. P. C. COATES, B.A.Sc.,
D. and B. C. Land Surveyor. Victoria, B.C.
1. S. B. CODE, O.L.S.,
Civil Engineer and Land Surveyor. Smith's Falls, Ont.
- 1.*T. F. CODE, B.A.Sc. (deceased).
- 1.*W. A. COWAN,
Division Engineer, Transcontinental Railway. Cochrane, Ont.
- 3.*S. E. CRAIG, B.A.Sc.,
Snelgrove, Ont.
- 1.*S. R. CRERAR, B.A.Sc., O.L.S.,
Lecturer in Surveying, University of Toronto. Toronto, Ont.
3. W. M. CURRIE,
General Manager, Burlington Steel Co., Ltd. Hamilton, Ont.
3. H. H. DEPEW,
Supt. Crow's Nest Pass Electric Light and Power Co. Fernie, B.C.
2. A. J. ELDER,
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2. J. G. FLECK,
On Overseas Service.
- 1.*A. L. FORD, B.A.Sc.,
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3. W. S. GIBSON, B.A.Sc.,
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1. J. N. GOODALL,
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1. J. P. GORDON,
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3. W. W. GRAY, B.A.Sc.,
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3. A. GRAY, B.A.Sc.,
On Overseas Service.
3. W. K. GREENWOOD, B.A.Sc.,
Town Engineer. Orillia, Ont.
1. L. D. HARA,
Assistant Engineer, Welland Canal Co. St. Catharines, Ont.
3. C. J. HARRIS, B.A.Sc.,
With Brantford Screw Co. Brantford, Ont.
1. J. B. HERON, B.A.Sc.,
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1. E. M. M. HILL,
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2. S. N. HILL, C.E.,
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2. C. J. INGLES,
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1. P. V. JERMYN, B.A.Sc.,
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3. W. S. H. KEEFE,
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3. W. J. LARKWORTHY (deceased).

*Diploma with honours.

1904—Continued.

3. O. B. McCUAIG, B.A.Sc.,
On Overseas Service.
1. G. G. McEWEN, B.A.Sc., Winchester, Ont.
Office of T. H. Dunn, O.L.S.
- 1.*W. G. McFARLANE, B.A., B.A.Sc., 55 Elliott St., Toronto, Ont.
Engineer and Surveyor, Peace River Dist.
- 3.*C. P. McGIBBON, B.A., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. McKAY, B.A.Sc. (deceased).
1. D. McMILLAN, Edmonton, Alta
With C.N.R.
3. G. J. MANSON, M.E., Penetang, Ont.
Engineer, Grenville Board Co.
- 1.*W. N. MOORHOUSE, Toronto, Ont.
3. E. E. MOORE, Toronto, Ont.
Hydro-Electric Power Commission.
3. W. H. MUNRO,
On Overseas Service.
3. G. PACE, B.A.Sc., Midland, Ont.
With Simcoe Ry. and Power Co.
3. W. S. PARDOE, B.A.Sc., Philadelphia, Pa.
Asst. Prof. in Civil Engineering, University of Pennsylvania.
3. J. PARIS, North Bay, Ont.
c/o S. B. Clement, T.N.O. Ry.
1. J. PARKE, B.A.Sc., Havilah, Ont.
Chemist and Assayer.
3. W. J. PEAKER, Ottawa, Ont.
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- 3.*A. E. PICKERING, Sault Ste. Marie, Ont.
Manager, Tagona Light and Power Co.
1. D. L. C. RAYMOND, B.A.Sc., Montreal, Que.
The Raymond Construction Co., Ltd.
1. F. B. REID, B.A.Sc., Ottawa, Ont.
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- 3.*M. R. RIDDELL, B.A.Sc., Toronto, Ont.
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1. L. H. ROBINSON, Box 745, Truro, N.S.
3. G. S. ROXBURGH, B.A.Sc., Winnipeg, Man.
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2. F. N. RUTHERFORD, B.A.Sc., St. Catharines, Ont.
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3. P. M. SAUDER, 513 8th Ave. W., Calgary, Alta.
- 1.*J. D. SHEPLY, B.A.Sc., D.L.S., N. Battleford, Sask.
District Surveyor and Engineer.
3. F. W. SLATER, B.A.Sc., Schenectady, N.Y.
With General Electric Co.
- 3.*R. S. SMART, M.E., Ottawa, Ont.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. D. A. SMITH, B.A.Sc., D. & S. L. S.,
On Overseas Service.
3. W. J. SMITHER, B.A.Sc., Toronto, Ont.
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*Diploma with honours.

1904—Continued.

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3. C. J. TOWNSEND, B.A.Sc., C.E. 79 Spadina Ave., Toronto, Ont.
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1. A. V. TRIMBLE, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
3. B. B. TUCKER, B.A.Sc., Morrisburg, Ont.
Resident Engineer, New York and Ontario Power Co.
- 2.*E. WADE, B.A., Welland, Ont.
Builder.
- 1.*E. W. WALKER, B.A.Sc. (deceased).
3. J. P. WATSON, B.A.Sc., Montreal, Que.
With Dominion Bridge Co. Ltd.
1. J. M. WEIR, Toronto, Ont.
Sec.-Treasurer, The Toronto Plate Glass Importing Co., Ltd.
- 1.*A. F. WELLS, O.L.S., B.A.Sc., Toronto, Ont.
Wells & Gray, Ltd., Engineers and Contractors.
1. W. R. WORTHINGTON, B.A.Sc., Toronto, Ont.
Assistant Sewer Engineer, Staff of City Engineer.
3. W. F. WRIGHT, Toronto, Ont.
Ontario Manager, Eugene F. Phillips Electrical Works.

1905.

2. H. W. ARENS (deceased).
3. R. H. ARMOUR, 345 Jarvis Street, Toronto, Ont.
- 3.*C. B. AYLESWORTH, Hamilton, Ont.
Draftsman, Canadian Westinghouse Co.
- 1.*W. BARBER, B.A.Sc., Toronto, Ont.
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- 2.*W. A. BEGG, B.A.Sc., Regina, Sask.
Department of Public Works.
- 3.*G. G. BELL,
On Overseas Service.
1. J. C. BOECKH, Toronto, Ont.
With Boeckh Brush Co.
3. W. M. BRISTOL, Halifax, N.S.
Canadian Westinghouse Co.
2. W. C. CAMPBELL, Keene, Ont.
3. W. R. CARSON, Cleveland, O.
Engineering Dept., Grasselli Chemical Co.
1. A. V. CHASE, Ottawa, Ont.
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3. S. R. A. CLEMENT, Toronto, Ont.
With Hydro-Electric Power Commission.
3. T. E. CORRIGAN, New Westminster, B.C.
Electrical Contractor.
- 1.*N. L. R. CROSBY, B.A.Sc., Toronto, Ont.
Contracting Engineer, Toronto Structural Steel Co.
1. G. H. FERGUSON, B.A.Sc., Ottawa, Ont.
Assistant Engineer, Commission of Conservation.
3. H. S. FIERHELLER, B.A.Sc. (deceased).

*Diploma with honours.

1905—Continued.

3. F. H. HARRISON, 320 Fifth Ave., New York, N.Y.
Engineer, H. D. Best Co.
1. M. C. HENDRY, B.A.Sc., Winnipeg, Man.
Manitoba Hydrographic Survey.
2. C. S. L. HERTZBERG.
On Overseas Service.
- 3.*W. G. HEWSON, B.A.Sc., Toronto, Ont.
Hydro Electric Power Commission.
1. G. S. JONES, Ottawa, Ont.
Topographical Surveys Br., Dept. of Interior.
- 3.*G. KRIBS, 190 University Ave., Toronto, Ont.
With H.E.P.C.
2. P. A. LAING,
On Overseas Service.
1. A. LATORNELL, B.A.Sc., Toronto, Ont.
Sewer Department, City Hall.
3. J. W. LEIGHTON, Toronto, Ont.
President, Leighton-Jackes Mfg. Co.
- 1.*T. R. LOUDON, B.A.Sc.,
On Overseas Service.
3. S. E. MCGORMAN, Walkerville, Ont.
Asst. Engineer, Canadian Bridge Co.
- 1.*W. W. MCGREGOR (deceased).
2. D. W. MCKENZIE, Winnipeg, Man.
Draftsman, Engineering Dept. C.N. Ry.
- 3.*C. A. MCLEAN, Toronto, Ont.
Masco Co.
2. W. N. MCLEAN, Erin, Ont.
3. F. G. MACE, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.
3. R. W. MOFFATT, B.A.Sc., Winnipeg, Man.
University of Manitoba.
3. L. W. MORDEN, St. Catharines, Ont.
Packard Electric Co.
3. G. R. MUNRO, B.A.Sc., Peterborough, Ont.
c/o Wm. Hamilton Manufacturing Co.
- 3.*W. G. NICKLIN, B.A.Sc., Grand Rapids, Mich.
Assistant Superintendent, Dalnu & Kiefer Tanning Co.
1. E. D. O'BRIEN, Dartmouth, N.S.
Chief Engineer, Halifax & Marine Ry.
- 1.*B. B. PATTEN, B.A.Sc.,
On Overseas Service.
1. E. P. A. PHILLIPS, B.A.Sc., O.L.S., Port Arthur, Ont.
Phillips & Benner.
1. W. B. PORTE, Oakville, Ont.
2. E. F. PULLEN,
On Overseas Service.
2. G. L. RAMSEY, B.A.Sc., Sault Ste. Marie, Ont.
Ontario Land Surveyor.
1. G. W. RAYNER, Toronto, Ont.
Ontario Rock Co.
- 3.*R. B. ROSS (deceased).
5. T. E. ROTHWELL, B.A.Sc., Toronto, Ont.
Provincial Assay Office.

*Diploma with honours.

1905—Continued.

- 2.*G. S. SCOTT, 26 Howard St., Toronto, Ont.
3. H. V. SERSON, Arnprior, Ont.
3. C. H. SHIRRIFF, B.A.Sc., Toronto, Ont.
Chemist, Imperial Extract Co.
- 3.*C. E. SISSON, Peterboro', Ont.
Canadian Gen. Electric Co.
1. D. L. N. STEWART, B.A.Sc.,
On Overseas Service.
1. M. A. STEWART, Toronto, Ont.
Assistant Engineer, Roadway Dept., City Hall.
- 3.*W. F. STUBBS, Galt, Ont.
Assistant Engineer, Goldie & McCulloch Co.
1. N. H. STURDY, Youngstown, O.
Chief Engineer, Truscon Steel Co.
1. W. G. SWAN, B.A.Sc., C.E., New Westminster, B.C.
- 1.*F. H. SYKES, O. & D.L.S., Toronto, Ont.
City Architect's Dept., City Hall.
3. L. R. THOMSON, B.A.Sc., Ottawa, Ont.
Sec., Hon. Advisory Council for Scientific and Industrial Research.
3. E. D. TILLSON, B.A.Sc., 502 Webster Building, Chicago, Ill.
- 1.*J. J. TRAILL, B.A.Sc., Toronto, Ont.
Lecturer in Mechanical Engineering, University of Toronto.
- 1.*W. M. TREADGOLD, B.A., Toronto, Ont.
Asst. Professor in Surveying, University of Toronto.
3. W. E. TURNER, B.A.Sc., Salt Lake City, Utah
With Utah Light & Ry. Co.
3. A. E. UREN, Toronto, Ont.
Editor, Acton Publishing Co.
3. J. M. VAUGHAN, 58 Melville Ave., Toronto, Ont.
Contractor.
1. H. L. WAGNER, B.A.Sc., 76 Mavety St., Toronto, Ont.
Instructor, Invalided Soldiers' Commission.
2. W. H. YOUNG, B.A.Sc., D.L.S., Calgary, Alta.
District Engineer.

1906.

1. F. ALPORT, B.A.Sc., D.L.S.
On Overseas Service.
- 3.*W. L. AMOS, Toronto, Ont.
Hydro-Electric Power Commission.
1. A. H. ARENS, Orillia, Ont.
- 3.*J. C. ARMER, B.A.Sc.,
On Overseas Service.
1. M. H. BAKER, B.A.Sc., Toronto, Ont.
With Canadian Fire Underwriters Ass'n.
3. F. W. BALDWIN, Hammondsport, N.Y.
With Dr. Graham Bell.
2. E. W. BANTING, B.A.Sc., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. F. BARBER, 57 Adelaide St. East, Toronto, Ont.
York County Engineer.

*Diploma with honours.

1906—Continued.

2. M. BATES, B.A.Sc. (deceased).
2. J. P. BELLISLE (deceased).
- 3.*H. H. BETTS, B.A.Sc.,
On Overseas Service.
- 5.*D. E. BEYNON, B.A.Sc.,
General Supt., Dunlop Tire and Rubber Goods Co. Toronto, Ont.
2. G. W. BISSETT,
Mill Supt., Canadian Exploration Co., Ltd. Naughton, Ont.
3. W. C. BLACKWOOD, B.A.Sc.,
Professor of Physics, Ontario Agricultural College. Guelph, Ont.
3. H. E. BRANDON, B.A.Sc.,
On Overseas Service.
1. M. E. BRIAN, B.A.Sc., O.L.S., A.M.E.I.C.,
City Engineer. Windsor, Ont.
2. F. C. BROADFOOT,
Broadfoot, Johnston & Hamilton. Vancouver, B.C.
2. T. W. BROWN, B.A.Sc., D., S. & A.L.S., A.M.E.I.C.,
Brown & Loucks, Civil Engineers. Saskatoon, Sask.
- 1.*A. E. K. BUNNELL, B.A.Sc.,
Engineer, Civic Transportation Committee. Toronto, Ont.
3. F. M. BYAM,
Chief Engineer, McGregor and McIntyre. Toronto, Ont.
3. A. CAMERON,
Provincial Architect's Office. Winnipeg, Man.
3. A. W. CAMPBELL, B.A.Sc.,
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1. M. J. CARROLL,
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- 3.*R. E. C. CHADWICK,
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- 1.*G. T. CLARK, B.A.,
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- 3.*G. A. COLHOUN,
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- 1.*W. A. M. COOK, B.A.Sc.,
Staff of City Architect, City Hall. Toronto, Ont.
- 1.*E. L. COUSINS, B.A.Sc.,
General Manager, Harbour Commission. Toronto, Ont.
4. A. G. CREIGHTON,
Creighton & Strothers, Architects and Structural Engineers. Prince Albert, Sask.
4. W. N. DANIELS,
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- 3.*N. P. F. DEATH, B.A.Sc.,
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3. C. S. DUNDASS, B.A.Sc.,
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3. S. L. FEAR,
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- 5.*C. C. FORWARD,
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5. C. W. GRAHAM, B.A.Sc.,
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3. J. GRAY,
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- 1.*P. W. GREENE,
On Overseas Service.

*Diploma with honours.

1906—Continued.

3. C. B. HAMILTON, B.A.Sc.,
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- 1.*A. L. HARKNESS, B.A.Sc.,
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- 1.*R. L. HARRISON,
Toronto, Ont.
1. E. HARRISON, B.A.Sc.,
Consulting Civil Engineer and Surveyor. 513 Beveridge Blk., Calgary, Alta.
3. J. C. HARTNEY, B.A.Sc. (Killed in action, France, 1918).
1. S. HETT, B.A.Sc.,
Locating Engineer of the Hudson Bay Ry. LePas, Man.
3. C. R. HILLIS. (Killed in action, France, 1918).
3. C. W. HOOKWAY, B.A.Sc.,
Westinghouse Mfg. Co. Hamilton, Ont.
3. R. H. HOPKINS, B.A.Sc.,
On Overseas Service.
- 1.*R. S. HOUSTON,
With the Dominion Bridge Co. Winnipeg, Man.
- 2.*W. HUBER,
With Provincial Highway Commission. Toronto, Ont.
- 3.*A. H. HULL, B.A.Sc.,
With Hydro-Electric Power Commission. Toronto, Ont.
3. W. C. JEPSON,
Welland Canal Office. Niagara Falls, Ont.
- 1.*C. JOHNSTON, B.A.Sc.,
Engineer, Toronto and York Radial Ry. Oakville, Ont.
1. G. R. JONES, B.A.Sc.,
On Overseas Service.
3. T. JONES, B.A.Sc. (Killed in action, France, 1916).
- 1.*A. E. JUPP, B.A.Sc.,
Toronto, Ont.
3. J. D. KIPPY (deceased).
5. H. M. LANCASTER, B.A.Sc.,
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1. J. L. LANG, B.A.Sc., D. & O.L.S.,
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3. A. P. LINTON, B.A.Sc.,
On Overseas Service.
- 4.*A. WELLESLEY McCONNELL, B.A.Sc.,
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- 3.*D. G. McILWRAITH,
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2. J. A. MCKENZIE,
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- 1.*J. V. McNAB,
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3. J. A. MCPHERSON,
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2. K. A. MACKENZIE, B.A.Sc.,
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1. W. C. MACKINNON,
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- 3.*W. MACLACHLAN, B.A.Sc.,
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*Diploma with honours.

1906—Continued.

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Dominion Bridge Co.
- 1.*REV. J. MELLON MENZIES, B.A.Sc., D.L.S.,
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3. L. R. MILLER, B.A.Sc., Watrous, Sask.
Supt., Electric Light, Power and Traction Co.
- 1.*B. F. MITCHELL, B.A.Sc., Edmonton, Alta.
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1. F. F. MONTAGUE.
On Overseas Service.
- 1.*W. J. MOORE, O.L.S., Pembroke, Ont.
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1. C. R. MURDOCK, B.A.Sc., Burlington, Ont.
Resident Engineer, Chipman and Power.
2. C. J. MURPHY, B.A.Sc., Nova Scotia Bank Bldg., St. Catharines,
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- 1.*W. P. NEAR, B.A., B.A.Sc., St. Catharines, Ont.
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2. R. NEELANDS,
On Overseas Service.
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3. G. W. PATERSON, 800 Poyntz Ave., Manhattan, Kansas.
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- 2.*R. C. PURSER, B.A.Sc., 213 Fifth Ave., Ottawa, Ont.
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3. N. R. ROBERTSON, B.A.Sc., Walkerton, Ont.
1. J. O. RODDICK, B.A.Sc., Brantford, Ont.
Contractor.
1. C. H. ROGERS, B.A.Sc., Peterborough, Ont.
- 2.*O. ROLFSON, M.A.Sc., D. & O.L.S.,
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1. R. C. ROSS, B.A.Sc., Ottawa, Ont.
Department of the Interior.
1. K. G. ROSS, Sault Ste. Marie, Ont.
Lang & Ross, Engineers and Surveyors.
- 1.*H. T. ROUTLY, O. & D.L.S., Toronto, Ont.
Construction Engineer, Provincial Highways.
2. J. H. RYCKMAN, Sault Ste. Marie, Ont.
With Algoma Construction & Eng. Co.
- 3.*W. K. SANDERS, 58 Webster St., West Newton, Mass.
- 1.*W. A. SCOTT, B.A.Sc., D.L.S., Galt, Ont.
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- 1.*W. M. STEWART, B.A.Sc., Saskatoon, Sask.
Phillips, Stewart & Lee.
2. J. E. THOMSON, B.A.Sc., Toronto, Ont.
Lecturer in Mineralogy, University of Toronto.
- 3.*C. L. VICKERY (deceased).
5. W. E. WICKETT (deceased).
- 3.*J. N. WILSON, B.A.Sc., Toronto, Ont.
Asst. Eng. H.E.P.C.
- 3.*E. M. WOOD, B.A.Sc., Toronto, Ont.
H.E.P.C.

*Diploma with honours.

1907.

- 3.*F. G. ALLEN, B.A.Sc., 707 High Street, Easton, Pa.
 1. F. J. ANDERSON, B.A.Sc. (Killed in action, Nov. 1917).
 1. A. P. AUGUSTINE,
On Overseas Service.
 1. O. B. BOURNE, Morrisburg, Ont.
H.E.P.C.
 3.*H. D. BOWMAN, B.A.Sc., Y.M.C.A., Brooklyn, N.Y.
 3. W. S. BRADY, B.A.Sc., 413 Palmerston Ave., Toronto, Ont.
 1. G. H. BROUGHTON, 176 Montrose Ave., Toronto, Ont.
 1. J. A. BROWN, B.A.Sc., Vancouver, B.C.
Trussed Concrete Steel Co.
 1. W. J. BRUCE, Sault Ste. Marie, Ont.
Dept. of Public Works.
 1. C. E. BUSH, B.A.Sc., 156 Geoffrey St., Toronto, Ont.
 3. J. H. CASTER, Toronto, Ont.
Hydro-Electric Power Commission.
 1.*E. CAVELL, Toronto, Ont.
 1.*C. B. B. CONNELL, St. Kitts, B.W.I.
 3.*G. C. COWPER, B.A.Sc., Welland, Ont.
Topographical Surveys in Sask.
 2. J. V. CULBERT, B.A.Sc., Cobalt, Ont.
Buffalo Mines.
 3.*R. S. DAVIS, B.A.Sc., 315 Rogers Bldg., Vancouver, B.C.
Davis, Hartney & Co.
 3. S. D. EVANS, B.A.Sc., Leamington, Ont.
 3.*F. R. EWART, B.A.Sc., Toronto, Ont.
Ewart & Jacob, Excelsior Life Building.
 1. G. R. S. FLEMING. (Killed in action, 1917).
 6. P. C. FUX, B.A.Sc., Brantford, Ont.
With Waterous Engine Works Co.
 1. J. S. GALLETLY, B.A.Sc., Brooklin, Ont.
 2. G. GALT, B.A.Sc. (Killed in action, France, 1916).
 1. A. B. GARROW, B.A.Sc.,
On Overseas Service.
 1. A. GILLIES, B.A.Sc.,
On Overseas Service.
 1. G. W. GRAHAM, Eugenia, Ont.
 3. C. S. GRASETT, B.A.Sc., Barrie, Ont.
 1.*R. E. W. HAGARTY, B.A.Sc., 662 Euclid Avenue, Toronto, Ont.
Industrial Engineer.
 3. K. HALL, B.A.Sc.,
On Overseas Service.
 1. C. T. HAMILTON, B.A.Sc., 142 Hastings St. W., Vancouver, B.C.
Johnston and Hamilton.
 3. R. A. HARE, St. Catharines, Ont.
With Canadian Crocker Wheeler Co.
 1. H. F. H. HERTZBERG,
On Overseas Service.
 3.*H. O. HILL, B.A.Sc.,
On Overseas Service.
 1.*T. H. HOGG, B.A.Sc., C.E., Toronto, Ont.
Asst. Engineer, Hydro-Electric Power Com.

*Diploma with honours.

1907—Continued.

- 3.*C. H. HUTTON, B.A.Sc., Hamilton, Ont.
Engineering Staff, Dominion Power Co.
1. H. M. HYLAND, B.A.Sc., 39 Portland Street, New York, N.Y.
3. E. W. HYMAN, B.A.Sc., London, Ont.
Assistant Superintendent, London Electric Co.
- 3.*L. G. IRELAND, B.A.Sc.,
Chief Engineer, Hydro-Electric System, Eastern Ontario.
- 1.*W. JACKSON, B.A.Sc., Niagara Falls, Ont.
Field Engineer, Ontario Power Co.
- 4.*C. B. JACKSON, Toronto, Ont.
Jackson-Lewis Co.
- 3.*E. W. KAY, B.A.Sc., 517 Bannatyne Ave., Winnipeg, Man.
3. D. F. KEITH, B.A.Sc.,
On Overseas Service.
1. H. P. KEITH, Edmonton, Alta.
Smith & Keith, Alta. Land Surveyors and Engineers.
1. A. A. KINGHORN, B.A.Sc., Toronto, Ont.
Manager, Asphaltic Concrete Co. of Toronto, Ltd.
1. L. W. KLINGER,
On Overseas Service.
- 1.*F. C. LAMB, B.A.Sc., Saskatoon, Sask.
Phillips, Stewart & Lee.
3. A. D. LEPAN, B.A.Sc., Toronto, Ont.
Asst. Supt. of Buildings and Grounds, University of Toronto.
1. J. H. LINDSAY, S. & D. L. S., Prince Albert, Sask.
Dist. Surveyor and Engineer, Public Works Dept.
3. J. A. D. MCCURDY, Toronto, Ont.
Curtiss Aeroplane Co.
- 1.*J. B. MCFARLANE, B.A.Sc., Lake Saskatoon, Alta.
Dominion Land Surveyor.
- 3.*D. J. MCGUGAN, B.A.Sc., New Westminster, B.C.
Burnett & McGugan.
3. A. H. MCINTOSH, 59 Albany Ave., Toronto, Ont.
3. F. W. MCNEILL, B.A.Sc., Calgary, Alta.
Canadian General Electric Co.
- 1.*M. K. MCQUARRIE, Kentville, N.S.
Engineer, D.A.R.
1. A. G. MACKAY, New York, N.Y.
With Hudson & Manhattan Ry. Co.
1. W. D. MACKENZIE, 501 Tribune Bldg., Winnipeg, Man.
Div. Engineer, Greater Winnipeg Water Dist.
- 1.*G. MACLEOD, 10126 124th Street, Edmonton, Alta.
1. W. S. MALCOLMSON, B.A.Sc., 163 Havelock Street, Toronto, Ont.
Engineer and Surveyor.
3. S. A. MARSHALL, Welland, Ont.
6. D. H. C. MASON, B.A.Sc., 295 Russell Hill Drive, Toronto, Ont.
1. J. W. MELSON, B.A.Sc., Toronto, Ont.
Demonstrator in Str. of Mat. and Physics, University of Toronto.
1. G. G. MILLS, B.A.Sc.,
On Overseas Service.
3. J. B. MINNS, B.A.Sc., Toronto, Ont.
Canadian General Electric Co.

*Diploma with honours.

1907—Continued.

- 4.*G. N. MOLESWORTH, 3 Hawthorne Ave., Toronto, Ont.
1. J. M. MOORE, B.A.Sc., London, Ont.
With McClary Mfg. Co.
- 5.*P. F. MORLEY, Toronto, Ont.
Meteorological Office.
1. E. W. MURRAY, B.A.Sc., Regina, Sask.
Dept. of Public Works.
3. J. D. MURRAY, Toronto, Ont.
With Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. E. W. NEELANDS, B.A.Sc., New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. R. E. K. NEELANDS, B.A.Sc., Box 163, Guelph, Ont.
- 2.*B. NEILLY, B.A.Sc., M.E., Cobalt, Ont.
Manager, Penn-Canadian Mines.
1. A. E. NOURSE, B.A.Sc., Toronto, Ont.
3. J. J. O'SULLIVAN,
On Overseas Service.
2. T. K. PATON, Wardner, Ida.
Mining Engineer.
1. F. W. PAULIN, O.L.S., Bank of Hamilton Bldg., Hamilton, Ont.
Contractor.
1. R. B. POTTER, B.A.Sc., 235 Garden Ave., Toronto, Ont.
Asst. Engineer, Roadways Dept., City Hall.
- 3.*F. E. PROCHNOW, B.A.Sc., Buffalo, N.Y.
With Wilhelm, Parker & Ward, Patent Attorneys.
- 3.*J. F. PROCUNIER, 1232 Victoria Ave., Vancouver, B.C.
3. G. E. QUANCE, B.A.Sc., Delhi, Ont.
Secy.-Treas. of the Delhi Light & Power Co., Ltd.
- 3.*H. RAINE, Toronto, Ont.
With Prack & Perrine, Architects and Engineers.
- 1.*J. L. RANNIE, B.A.Sc., Ottawa, Ont.
Observer, Geodetic Survey.
3. C. W. B. RICHARDSON, B.A.Sc., Toronto, Ont.
Instructor in Drawing, University of Toronto.
1. A. A. RIDLER, Toronto, Ont.
Supt. Constructing & Paving Co., Ltd.
5. H. E. ROTHWELL, B.A.Sc., Toronto, Ont.
Harris Abattoir Co.
5. C. A. SCHOFIELD, Buffalo, N.Y.
Chemist, Schoellkopf-Hartford & Hanna Co.
- 1.*A. C. T. SHEPPARD, Ottawa, Ont.
Geological Survey.
1. F. R. SMITH, B.A., Vancouver, B.C.
3. E. R. SMITHRIM, B.A.Sc., Strathroy, Ont.
- 1.*W. SNAITH, Niagara Falls, Ont.
H.E.P.C.
3. A. C. SPENCER, B.A.Sc., London, Ont.
3. G. S. STEWART, Toronto, Ont.
Sales Engineer, Canadian General Electric Co.
1. J. A. STILES, B.A.Sc., Fredericton, N.B.
Professor of Civil Engineering, University of N.B.

*Diploma with honours.

1907—Continued.

- 3.*J. L. STIVER, Ottawa, Ont.
Electrical Standard Laboratory, Inland Revenue Department.
1. J. L. G. STUART, B.A.Sc., Oakville, Ont.
Resident Engineer, Toronto-Hamilton Highway.
1. G. F. SUMMERS, O.L.S., Haileybury, Ont.
Routly & Summers, Engineers and Surveyors.
- 1.*H. W. SUTCLIFFE, New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. P. M. THOMPSON, B.A.Sc., 54 Thorold St., Toronto, Ont.
3. O. R. THOMSON, B.A.Sc., Trenton, Ont.
The Electric Power Co.
1. L. R. THOMSON, B.A.Sc., Ottawa, Ont.
Sec., Hon. Advisory Council for Scientific and Industrial Research.
1. W. J. WALKER, Grant, Ont.
With Transcontinental Ry.
1. E. D. WILKES, B.A.Sc., Toronto, Ont.
Main Drainage Department, City Hall.
3. A. F. WILSON, B.A.Sc., Cleveland, Ohio.
With Cleveland Telephone Co.
3. M. H. WOODS, B.A.Sc., Aylmer West, Ont.
1. G. W. A. WRIGHT, 65 Oakmount Bl., Toronto, Ont.
Supervisor of Prod'ns., Imperial Munitions Bd.
3. J. YOUNG, Box 2973, Winnipeg, Man.
- 3.*A. R. ZIMMER, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.

1908.

3. H. G. AKERS, B.A.Sc. (deceased).
 R. J. ARENS, B.A.Sc., Akron, Ohio.
Supt., Firestone Tire Co.
3. L. F. ALLAN,
On Overseas Service.
- 1.*C. B. ALLISON, O.L.S., South Woodslee, Ont.
- 1.*R. M. ANDERSON, B.A.Sc.,
On Overseas Service.
5. R. J. ARENS, B.A.Sc., Akron, O.
Chemist, Firestone Tire & Rubber Co.
3. H. C. BARBER, B.A.Sc.,
On Overseas Service.
1. E. BARTLETT, B.A.Sc., Medicine Hat, Alta.
Surveyor and Civil Engineer.
2. F. J. BEDFORD (deceased).
- 1.*G. G. BELL,
On Overseas Service.
3. G. E. BLACK, B.A.Sc., Toronto, Ont.
Provincial Secretary's Office.
3. H. F. BOWES, Toronto, Ont.
Superintendent of Warren Bituminous Paving Co., Ltd.
- 3.*J. H. BRACE, Montreal, P.Q.
Traffic Engineer, Bell Telephone Co.
1. P. R. BRECKEN, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1908—Continued.

3. E. I. BROWN, Toronto, Ont.
Sales Dept., Northern Electric & Manufacturing Co.
1. W. F. M. BRYCE, Ottawa, Ont.
Assistant Engineer, City Engineer's Department.
3. P. H. BUCHAN, B.A.Sc., Vancouver, B.C.
 2. J. E. CAMPBELL, B.A.Sc., Coldstream, Ont.
 3. N. A. CAMPBELL, 629 4th Street, Edmonton, Alta.
 3. A. M. CARROLL,
On Overseas Service.
1. H. R. CARSCALLEN, B.A.Sc., 341 Markham Street, Toronto, Ont.
 3. G. CHALLEN, Chedoke P.O., Hamilton, Ont.
 1. F. H. CHESNUT, B.A.Sc., San Francisco, Cal.
With White Truck Co.
1. W. E. COLE (deceased).
 4.*W. C. COLLETT, B.A.Sc., Toronto, Ont.
Construction Engineer, British Acetones, Toronto, Ltd.
1. R. Y. CORY, B.A.Sc., 5 Deer Park Cres., Toronto, Ont.
 3.*H. COYNE, B.A.Sc., Racine, Wisc.
With Thomas & Thomas.
- 2.*J. D. CUMMING, B.A.Sc., Copper Cliff, Ont.
Asst. Mech. Supt., with Canadian Copper Co.
6. A. D. DAHL, B.A.Sc., Midland, Mich.
Chemist, Dow Chemical Co.
1. F. A. DANKS, Toronto, Ont.
Advertising Dept., "Canadian Engineer."
3. J. DARROCH, Detroit, Mich.
Draftsman, Autoparts Mfg. Co.
3. H. C. DOORLY (deceased).
 2. R. H. DOUGLAS, Edmonton, Alta.
Department of Public Works.
- 2.*F. C. DYER, B.A.Sc., Toronto, Ont.
Lecturer in Mining Engineering, University of Toronto.
1. F. M. EAGLESON, Winchester, Ont.
Engineer and Surveyor.
1. C. EDWARDS, B.A.Sc.,
On Overseas Service.
1. S. L. EVANS, B.A.Sc., Corinth, Ont.
Dominion Land Surveyor
1. E. O. EWING, B.A.Sc., Toronto, Ont.
With James, Loudon & Hertzberg.
1. O. L. FLANAGAN, B.A.Sc., Cobalt, Ont.
Engineer.
1. C. FLINT, B.A.Sc.,
On Overseas Service.
1. A. H. FOSTER, B.A.Sc., Guelph, Ont.
With Guelph St. Ry.
3. G. C. FRANCIS, Toronto, Ont.
With Canadian Fire Underwriters Ass'n.
3. S. S. GEAR, St. Catharines, Ont.

*Diploma with honours.

1908—Continued.

1. C. A. GRASSIE, B.A.Sc.,
With Kennedy & Sons. Collingwood, Ont.
- 3.*C. L. GULLEY, B.A.Sc.,
Manager, Superior Electric, Ltd. Pembroke, Ont.
3. J. W. HACKNER, B.A.Sc.,
Asst. Engineer, Dept. of Public Works. Toronto, Ont.
3. F. L. HAVILAND,
Draftsman, Hamilton Bridge Works Co. Hamilton, Ont.
- 1.*C. D. HENDERSON,
Canadian Bridge Co. Walkerville, Ont.
1. E. G. HEWSON,
Division Engineer, Grand Trunk Ry. Toronto, Ont.
- 5.*D. J. HUETHER, B.A.Sc.,
With Dunlop Tire and Rubber Co. Toronto, Ont.
1. A. D. HUETHER, B.A.Sc.,
47 Highview Cres., Toronto, Ont.
- 3.*A. N. HUNTER, B.A.Sc.,
Canadian Inspection Co. Detroit, Mich.
3. S. B. ILER,
On Overseas Service.
- 1.*J. T. JOHNSTON, B.A.Sc.,
Hydraulic Engineer, Water Power Branch, Dept. of the Interior. Ottawa, Ont.
2. H. G. KENNEDY, B.A.Sc.,
On Overseas Service.
- 1.*W. R. KEYS,
T. & N. O. Ry. North Bay, Ont.
3. W. C. KILLIP,
On Overseas Service.
- 3.*J. N. M. LESLIE, B.A.Sc.,
With Canadian Westinghouse Co. Toronto, Ont.
3. F. C. LEWIS,
Jackson-Lewis Co. Toronto, Ont.
3. H. R. LYNAR,
Welland Ship Canal Office. St. Catharines, Ont.
- 1.*W. G. McGEORGE,
Consulting Engineer. Chatham, Ont.
1. J. M. MCGREGOR,
McCubbin & McGregor. Chatham, Ont.
1. L. A. McLEAN, B.A.Sc. (deceased).
1. W. A. A. McMASTER, A.S. & D.L.S.,
Prince Albert, Sask.
1. H. C. McMORDIE, B.A.Sc.,
On Overseas Service.
- 1.*A. A. McROBERTS, B.A.Sc.,
T. & N. O. Ry. North Bay, Ont.
- 5.*N. G. MADGE,
406 West 5th Ave., Roselle, N.J.
3. J. E. MALONE, B.A.Sc.,
With Illinois Steel Co. Chicago, Ill.
5. K. D. MARLATT,
Oakville, Ont.
1. R. J. MARSHALL, B.A.Sc.,
Canadian Inspection & Testing Co. Toronto, Ont.
5. G. L. MILLIGAN, B.A.Sc.,
Brampton, Ont.
1. A. B. MITCHELL,
With N. MacLeod, Contractor. Orillia, Ont.
- 4.*J. C. P. MOLESWORTH (deceased).

*Diploma with honours.

1908—Continued.

3. E. D. MONK, B.A.Sc., Cincinnati, Ohio
General Electric Co.
- 3.*F. H. MOODY, B.A.Sc., Toronto, Ont.
3. J. H. MORICE, B.A.Sc., San Francisco, Cal.
With General Electric Co.
3. F. E. H. MOWBRAY, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
- 3.*W. P. MURRAY, B.A.Sc., St. Paul's Station, Ont.
3. W. de C. O'GRADY, Calgary, Alta.
Ford Motor Car Company.
1. H. J. PECKOVER, B.A.Sc., 103 Cowan Ave., Toronto, Ont.
Draughtsman, City Hall.
- 1.*M. PEQUEGNAT, B.A.Sc., Kitchener, Ont.
1. H. G. PHILLIPS, D. & S.L.S., Regina, Sask.
Smith & Phillips, Civil Engineers.
3. M. PIVNICK, B.A.Sc., Toronto, Ont.
Dentist.
- 1.*E. M. PROCTOR, B.A.Sc., Toronto, Ont.
Secretary-Treasurer, James, Loudon & Hertzberg.
- 3.*C. F. PUBLOW, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
1. J. T. RANSOM, B.A.Sc., D. & O.L.S., 47 Braemore Gardens, Toronto, Ont.
Land Surveyor.
- 1.*W. B. REDFERN, B.A.Sc.,
On Overseas Service.
1. F. L. RICHARDSON, B.A.Sc., Toronto, Ont.
With Miller, Cummings & Robertson.
3. H. A. RICKER, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
1. A. R. ROBERTSON, B.A.Sc.,
On Overseas Service.
5. F. A. ROBERTSON, Toronto, Ont.
With Canada Cement Co.
- 1.*W. A. ROBINSON, Winnipeg, Man.
Right-of-Way Surveyor, C.P.R.
3. R. C. ROBINSON, Winnipeg, Man.
With C. N. Ry.
5. L. J. ROGERS, B.A.Sc., Toronto, Ont.
Assistant Professor in Analytical Chemistry, University of Toronto.
- 2.*R. R. ROSE, B.A.Sc.,
On Overseas Service.
3. D. ROSS, B.A.Sc., Dominion Savings Bldg., London, Ont.
1. A. O. SECORD, Brantford, Ont.
3. W. E. V. SHAW, B.A.Sc.,
On Overseas Service.
3. H. F. SHEARER, B.A.Sc., Toronto, Ont.
1. W. L. STAMFORD, B.A.Sc., Point du Bois, Man.
Inspector on Concrete Work, Hydro-Electric Power Plant.
3. R. H. STARR, B.A.Sc., Orillia, Ont.
Engineer.
3. A. W. J. STEWART, Toronto, Ont.
Toronto Hydro-Electric System.

*Diploma with honours.

1908—Continued.

3. J. ST. LAWRENCE, Erie, Pa.
General Electric Co.
1. J. J. STOCK, D.L.S., 448 Cowper St., Ottawa, Ont.
1. H. B. STUART, B.A.Sc.,
On Overseas Service.
2. J. L. G. STUART, B.A.Sc., Toronto, Ont.
Railway & Special Works Department, City Hall.
3. A. D. SWORD, B.A.Sc., Woodstock, Ont.
With Canadian Milk Products.
3. J. W. R. TAYLOR, B.A.Sc., Toronto, Ont.
Sales Dept., Canadian Westinghouse Co.
- 1.*W. E. TAYLOR, B.A.Sc., 323 Glen Road, Toronto, Ont.
York County Engineer's Office.
3. V. C. THOMAS, B.A.Sc., 34 McRae St., Niagara Falls, Ont.
1. J. H. THORNLEY, B.A.Sc., Dundas St., London, Ont.
1. C. G. TOMS, B.A.Sc., 56 Spencer Ave., Toronto, Ont.
General Manager, Toms Contracting Co., Ltd.
1. H. W. TYE,
On Overseas Service.
3. C. P. VAN NORMAN, B.A.Sc., Toronto, Ont.
Toronto & York Radial Ry.
1. T. L. VILLENEUVE, Chicoutimi, Que.
Assistant Engineer, Dept. of Public Works.
1. J. A. WALKER, B.A.Sc., B.C.L.S., Ottawa, Ont.
Inspector Artillery Stores, Militia Dept.
- 3.*B. W. WAUGH, B.A.Sc.,
On Overseas Service.
3. R. M. WEDLAKE, B.A.Sc., Brantford, Ont.
With Cockshutt Plow Co., Ltd.
3. R. P. WEIR, Toronto, Ont.
Canadian Manager, Cutter Elec. and Mfg. Co.
1. A. M. WEST, B.A.Sc., N. Vancouver, B.C.
1. W. R. WHITE, Ottawa, Ont.
Chief Surveyor's Office, Dept. of Indian Affairs.
3. W. J. WHITE, B.A.Sc., Perth, Australia.
With British Thomson Houston Co.
- 3.*F. D. WILSON, B.A.Sc., Detroit, Mich.
1. J. M. WILSON, Toronto, Ont.
District Engineer, Dept. of Public Works of Canada.
1. D. O. WING, Vancouver, B.C.
City Engineer's Office.
- 3.*R. YOUNG, Vancouver, B.C.
With B.C. Electric Railway Co.

1909.

3. E. G. ARENS, Orillia, Ont.
3. H. V. ARMSTRONG, Estevan, Sask.
Town Engineer.
- 2.*E. T. AUSTIN, B.A.Sc., Coniston, Ont.
With the Mond Nickel Co.

*Diploma with honours.

1909—Continued.

3. W. H. BARRY, B.A.Sc., Niagara Falls, Ont.
Anderson and Barry, Engineers and Surveyors.
3. R. D. S. BECKSTEDT, B.A.Sc., Lacolle, Que.
3. R. E. BEITH,
On Overseas Service.
- 1.*G. A. BENNETT, B.A.Sc., C.E., Ottawa, Ont.
Topographical Surveys Br., Dept. of the Interior.
3. E. R. BIRCHARD, B.A.Sc., Toronto, Ont.
Russell Motor Car Co.
3. W. D. BLACK, B.A.Sc., Montreal, Que.
Supt., Otis-Fensom Elevator Co., Ltd.
- 3.*D. C. BLIZARD, B.A.Sc., Toronto, Ont.
Supt. Mechanical Construction, Toronto Power Co.
- 1.*W. J. BOULTON, B.A.Sc., Ottawa, Ont.
Surveyor, Dept. of Interior.
3. G. H. BOWEN, B.A.Sc., Toronto, Ont.
3. C. E. BROWN, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
1. E. W. BROWNE, B.A.Sc., 247 Cannon St. E., Hamilton, Ont.
1. J. A. BUCHANAN, 140 Jasper West, Edmonton, Alta.
3. J. E. BURNS, B.A.Sc., 231 Seaton St., Toronto, Ont.
1. M. G. CAMERON, B.A.Sc., Peterboro', Ont.
- 3.*R. A. CAMPBELL, Sault Ste. Marie, Ont.
With Municipal Lighting Plant.
1. V. S. CHESNUT, B.A.Sc., East St. John, N.B.
With St. John Dry Dock Co.
- 1.*C. G. CLINE, B.A.Sc., Vancouver, B.C.
Assistant Engineer, Dept. of the Interior.
1. J. G. COLLINSON, B.A.Sc., Port Weller, Ont.
Welland Ship Canal.
1. G. W. COLTHAM, B.A.Sc., Aurora, Ont.
- 3.*H. A. COOCH, B.A.Sc., Toronto, Ont.
Canadian Westinghouse Co.
3. W. E. CORMAN, Toronto, Ont.
Supt., Excelsior Electric Mfg. Co., Ltd.
3. T. H. CROSBY, B.A.Sc., Vancouver, B.C.
Sales Engineer, Canadian Westinghouse Co.
3. R. H. CUNNINGHAM, Walkerville, Ont.
Canadian Hoskins Ltd.
- 1.*F. A. DALLYN, B.A.Sc., C.E.,
On Overseas Service.
3. C. N. DANKS, Sherbrooke, Que.
Asst. Engineer, Jenckes Machine Co.
1. E. M. DANN. (Died of wounds received in action, France, 1916).
3. H. W. DAVIS, Kingston, Ont.
With A. Davis & Son, Ltd., Leather Manufacturers.
- 2.*A. I. DAVIS, B.A.Sc., Toronto, Ont.
1. H. C. DAVIS, Burlington, Ont.
1. I. H. DAWSON. (Died of wounds received in action, 1918).
3. W. H. DELAHAYE, B.A.Sc.,
On Overseas Service.
3. W. P. DERHAM, B.A.Sc., Athelma Apts., Toronto, Ont.
- 5.*W. A. DODDS, B.A.Sc., Syracuse, N.Y.
Chief Chemist, Penman-Littlehales Chemical Co.

*Diploma with honours.

1909—Continued.

1. R. H. DOUGLAS, Edmonton, Alta.
Department of Public Works.
6. A. R. DUFF, Toronto, Ont.
Demonstrator in Applied Chemistry, University of Toronto.
1. M. O. DUFF, 4 Hughson St. S., Hamilton, Ont.
2. L. J. DUTHIE, 33 High Park Gardens, Toronto, Ont.
1. F. S. FALCONER, B.A.Sc., Ottawa, Ont.
Geological Surveys Br., Dept. of Interior.
3. T. A. FARGEY, B.A.Sc., Detroit, Mich.
With Scott Bros. Electric Co.
1. J. B. FERGUSON, B.A.Sc., Cheyenne, Wyoming.
c/o Div. Engineer, V.P.R.R.
3. A. T. FERGUSON, B.A.Sc., 70 Madison Ave., Toronto, Ont.
3. T. E. FREEMAN, B.A.Sc., Montreal, Que.
Manager, Canadian Hoskins Ltd.
3. E. R. FROST, B.A.Sc., Welland, Ont.
Engineer, Metals Chemical Ltd.
1. A. E. GLOVER, B.A.Sc., Edmonton, Alta.
5. A. E. GOODERHAM, Toronto, Ont.
With Gooderham & Worts.
1. D. A. GRAHAM, B.A.Sc.,
On Overseas Service.
2. R. R. GRANT, 961½ Gerrard St. E., Toronto, Ont.
Contractor,
1. J. E. GRAY, B.A.Sc.,
On Overseas Service.
1. G. E. D. GREENE, B.A.Sc.,
On Overseas Service.
1. W. H. GREENE, Moose Jaw, Sask.
Assistant City Engineer.
1. W. W. GUNN, B.A.Sc., 243 Quebec Ave., Toronto, Ont.
3. F. G. HAGERMAN, Cobourg, Ont.
3. C. J. HARPER, Collingwood, Ont.
Engineer and Surveyor.
1. D. W. HARVEY, B.A.Sc., Toronto, Ont.
Canada Foundry Co.
1. C. O. HAY (deceased).
- 3.*J. HEMPHILL, Magpie Mine, Ont.
Construction Engineer, Algoma Steel Corp., Mines Dept.
- 1.*G. HOGARTH, Toronto, Ont.
Chief Engineer of Highways, Dept. of Public Works of Ontario.
3. A. E. HOLMES, B.A.Sc., Montreal, P.Q.
Canadian Westinghouse Co.
3. C. R. HOLMES, B.A.Sc.,
On Overseas Service.
1. G. C. HOSHAL, B.A.Sc., Niagara Falls, Ont.
Hydro-Electric Power Commission.
3. C. HUGHES, B.A.Sc. (killed in action, France, 1915).
1. A. E. HUNTER, B.A.Sc. (deceased).
3. H. IRWIN, B.A.Sc., 25 Glenlake Ave., Toronto, Ont.
3. J. ISBISTER, B.A.Sc., Onaway, Mich.
Onaway Electric Light and Power Co.
3. F. P. JACKES, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1909—Continued.

- 1.*J. E. JACKSON, 7 Hughson St. S., Hamilton, Ont.
 1. E. W. JAMES, B.A.Sc., Winnipeg, Man.
Bridge Engineer, Manitoba Government.
- 1.*C. C. JOHNSON, B.A.Sc., Wallaceburg, Ont.
 1. C. E. JOHNSTON, B.A.Sc. (deceased).
 1. W. J. JOHNSTON, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
- 1.*A. H. E. KEFFER, Toronto, Ont.
With James, Loudon & Hertzberg.
3. J. B. O. KEMP, B.A.Sc., St. Catharines, Ont.
On Staff, Ridley College.
3. W. R. KEY, B.A.Sc., Toronto, Ont.
Asst. Engineer, Turnbull Elevator Co.
5. H. N. KLOTZ, B.A.Sc. (Killed in action, France, 1915).
 3. A. W. LAMONT, B.A.Sc., Winnipeg, Man.
Canadian Westinghouse Co.
- 3.*C. B. LANGMUIR, B.A.Sc., Toronto, Ont.
Manager, Electrical Dept., Factory Products, Ltd.
3. A. E. LENNOX, B.A.Sc., Cleveland, Ohio
Publicity Engineer, National Electric Lamp Association.
- 1.*R. W. E. LOUCKS, Regina, Sask.
Provincial Surveys Branch.
1. N. C. A. LLOYD, Toronto, Ont.
Brown & Brown, Surveyors.
3. E. D. MACFARLANE, B.A.Sc., Houston, Texas
With Houston Electric Ry. Co.
1. J. G. MACKINNON,
On Overseas Service.
1. W. A. MACLACHLAN, B.A.Sc.,
On Overseas Service.
3. B. A. MACLEAN, B.A.Sc., Orillia, Ont.
 1. N. W. MACPHERSON, B.A.Sc., St. Thomas, Ont.
3. D. D. MCALPINE, B.A.Sc., 387 Markham St., Toronto, Ont.
 1. A. S. MCARTHUR, B.A.Sc.,
On Overseas Service.
3. C. R. MCCOLLUM, B.A.Sc., Wainfleet, Ont.
 3.*A. S. MCCORDICK, B.A.Sc., Sault Ste. Marie, Ont.
Assistant to City Engineer.
3. P. J. McCUAIG, B.A.Sc.,
On Overseas Service.
3. W. G. McINTOSH, B.A.Sc., Toronto, Ont.
Herbert Morris Crane and Hoist Co.
1. F. H. McKECHNIE, B.A.Sc., 216 Wilson Ave., Montreal, Que.
 3. J. H. MCKNIGHT, Simcoe, Ont.
 3. G. McLEOD, Waupaca, Wis.
Electrician, Electric Light & Ry. Co.
1. V. McMILLAN, B.A.Sc., London, Ont.
With Empire Mfg. Co.
- 3.*A. L. MALCOLM, B.A.Sc., Ottawa, Ont.
Water Power Branch, Dept. of Interior.
3. N. H. MANNING, B.A.Sc., Toronto, Ont.
With Canadian Inspection & Testing Co.
- 1.*A. B. MANSON, B.A.Sc., A.M.E.I.C., Stratford, Ont.
City Engineer.

*Diploma with honours.

1909—Continued.

- | | |
|--|---------------------------------|
| 1. E. S. MARTINDALE, B.A.Sc.,
<i>Dominion Land Surveyor.</i> | Aylmer, Ont. |
| 1. O. W. MARTYN, B.A.Sc., D. & S.L.S.,
<i>On Overseas Service.</i> | |
| 2. C. A. MORRIS, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 3. G. MORTON, B.A.Sc.,
<i>Manager, Canadian Westinghouse Co.</i> | Calgary, Alta. |
| 1.*F. V. MUNRO, B.A.Sc., | Chatham, Ont. |
| 1. E. A. NEVILLE, B.A.Sc., | Prince George, B.C. |
| 1. J. NEWTON, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 3.*L. S. ODELL,
<i>Imperial Munitions Board.</i> | Toronto, Ont. |
| 3. V. J. O'DONNELL, B.A.Sc.,
<i>With Canadian Westinghouse Co.</i> | Hamilton, Ont. |
| 3. J. J. O'HEARN,
<i>Rose & O'Hearn.</i> | Toronto, Ont. |
| 1. A. W. PAE,
<i>Davidson & Pae, Real Estate Brokers.</i> | Edmonton, Alta. |
| 1.*A. M. PETRY, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 3.*W. M. PHILP, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. R. B. PIGOTT, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 2. G. M. PONTON,
<i>Lt. Imperial Munitions Board, Explosives Dept.</i> | Ottawa, Ont. |
| 3.*C. J. PORTER, B.A.Sc.,
<i>With Texas Power and Light Co.</i> | Dallas, Texas. |
| 3. A. I. PROCTOR, | 852 King St. E., Hamilton, Ont. |
| 1. J. QUAIL,
<i>Manitoba Bridge and Iron Works.</i> | Winnipeg, Man. |
| 1. A. F. RAMSPERGER,
<i>With Canada Foundry Co.</i> | Toronto, Ont. |
| 1.*C. R. REDFERN, B.A.Sc.,
<i>Engineer, P. Lyall & Sons, Ltd., Contractors.</i> | Toronto, Ont. |
| 3.*L. T. RUTLEDGE, B.A.Sc.,
<i>Manager, Excelsior Electric Mfg. Co., Ltd.</i> | 320 Concord Ave., Toronto, Ont. |
| 1. A. U. SANDERSON, B.A.Sc.,
<i>Chief Engineer, Filtration Plant.</i> | Toronto, Ont. |
| 3.*R. A. SARA, B.A.Sc., E.E.,
<i>American Cellulose & Chemical Mfg. Co.</i> | New York, N.Y. |
| 3.*C. SCHWENGER, B.A.Sc.,
<i>Toronto Hydro-Electric System.</i> | Toronto, Ont. |
| 1. C. A. SCOTT,
<i>On Overseas Service.</i> | |
| 1. A. SEDGWICK,
<i>Ontario Dept. of Public Works.</i> | Toronto, Ont. |
| 1. B. H. SEGRE, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. F. V. SEIBERT, B.A.Sc.,
<i>Engineer and Surveyor, Dept. of Interior.</i> | Edmonton, Alta. |
| 5. M. R. SHAW, B.A.Sc.,
<i>Chief Chemist, Export Oil Corporation.</i> | Waggaman, La. |

*Diploma with honours.

1909—Continued.

3. M. W. SPARLING, B.A.Sc., Cobourg, Ont.
Electric Power Co.
3. J. J. SPENCE, Toronto, Ont.
With Sovereign Construction Co., Ltd.
1. D. S. STAYNER, B.A.Sc., C.E.
On Overseas Service.
- 2.*R. B. STEWART, M.A., B.A.Sc. Toronto, Ont.
- 1.*N. C. STEWART, B.A.Sc., Nelson, B.C.
- 1.*P. H. STOCK, 12 Fernwood Park Ave., Toronto, Ont.
1. J. C. STREET, B.A.Sc., St. Catharines, Ont.
Welland Ship Canal.
3. S. STROUD, B.A.Sc., Toronto, Ont.
With Canadian Westinghouse Co.
1. C. C. SUTHERLAND, B.A.Sc., C.E., 10714 125th St., Edmonton, Alta.
Alberta Dept. of Public Works.
1. R. G. SWAN, B.A.Sc., Vancouver, B.C.
B. C. Hydrographic Survey.
1. A. D. SWORD, B.A.Sc., Woodstock, Ont.
With Canadian Milk Products.
- 1.*H. W. TATE, B.A.Sc., Toronto, Ont.
- 3.*E. A. THOMPSON. Teeswater, Ont.
1. G. A. TIPPER, B.A.Sc., Brantford, Ont.
Contracting Surveyor.
3. A. G. TREES, B.A.Sc.,
On Overseas Service.
3. W. G. TURNBULL, B.A.Sc., Toronto, Ont.
Chief Engineer, Turnbull Elevator Co.
1. J. E. UNDERWOOD, Saskatoon, Sask.
McArthur, Murphy & Underwood.
1. C. P. VAN NORMAN, B.A.Sc., Toronto, Ont.
Toronto and York Radial Ry.
1. J. VAN NOSTRAND, 91 Delaware Ave., Toronto, Ont.
1. A. VATCHER, B.A.Sc., Freshwater, Bay de Verde, Nfld.
With the Reid Newfoundland Co.
1. C. M. WALKER, B.A.Sc., Banff, Alta.
Dom. Land Surveyor.
1. C. E. WEBB, B.A.Sc., Vancouver, B.C.
B.C. Hydrographic Survey, Dom. Water Power Br.
1. E. E. WEBB, Box 358, Orillia, Ont.
Contractor.
3. F. C. WHITE, B.A.Sc. 164 Richmond Street, Chatham, Ont.
Engineer, Canadian Des Moines Steel Co., Ltd.
3. A. R. WHITELAW, B.A.Sc., 10720 103rd St., Edmonton, Alta.
1. R. G. WILKINSON, Aberarder, Ont.
- 5.*J. A. MCK. WILLIAMS, B.A.Sc., Toronto, Ont.
A. E. Ames & Co.
1. O. T. G. WILLIAMSON, B.A.Sc., 225 Grange Road, Guelph, Ont.
3. L. R. WILSON, B.A.Sc., Lachine, Que.
Dominion Bridge Co.
3. F. F. WILSON, B.A.Sc., Toronto, Ont.
Surveyor.
2. S. A. WOOKEY, B.A.Sc., Schumacher, Ont.
Manager, Schumacher Mine.

*Diploma with honours.

1910.

2. J. H. ADAMS, B.A.Sc., 25 Maynard Ave., Toronto, Ont.
 3.*O. F. ADAMS, B.A.Sc., 132 Ulster Street, Toronto, Ont.
 3. J. N. AGNEW,
On Overseas Service.
 1.*W. G. AMSDEN, B.A.Sc., (killed in action, Aug. 1918).
 1. J. A. BAIRD, B.A.Sc., Sarnia, Ont.
Town Engineer.
 1.*W. J. BAIRD, B.A.Sc., R. R. No. 2, Scarborough Jct., Ont.
R. R. Grant & Co., Engineers and Surveyors.
 1. H. A. BARNETT, B.A.Sc., Durand, Mich.
With G.T. Ry.
 1.*E. W. BERRY,
On Overseas Service.
 1. H. C. BINGHAM, D.L.S., Briercrest, Sask.
Engineer and Surveyor.
 2. D. G. BISSET, B.A.Sc., Hosmer, B.C.
C.P.R. Coal Mines.
 1.*R. H. H. BLACKWELL, B.A.Sc., Orangeville, Ont.
With Wheelock & Christie.
 1.*E. P. BOWMAN, B.A.Sc., West Montrose, Ont.
 2. A. F. BROCK, B.A.Sc., Copper Cliff, Ont.
Chief Mine Surveyor, Canadian Copper Co.
 3. M. O. BROWNE, 313 McClellan Ave., Detroit, Mich.
 3. J. R. BURGESS, B.A.Sc.,
On Overseas Service.
 1. N. G. H. BURNHAM, B.A.Sc. (deceased).
 3.*W. C. CALE, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Comm.
 2.*A. D. CAMPBELL, B.A.Sc., M.E., Cobalt, Ont.
Mining Engineer, O'Brien Mine.
 3. W. M. CARLYLE, B.A.Sc. (killed in action, 1916).
 3. N. S. CAUDWELL, 82 Colborne Street, Brantford, Ont.
 3. A. W. CHESNUT, B.A.Sc., (Died at Shorncliffe, England, while on Overseas Service).
 1. D. C. CHISHOLM, B.A.Sc., Winnipeg, Man.
Resident Engineer, C.N.R.
 1. H. S. CLARK,
On Overseas Service.
 1. J. A. CLAVEAU, Chicoutimi, Que.
 3. L. S. COCKBURN, B.A.Sc., Wyandotte, Mich.
Engineering Dept., Pennsylvania Salt Mfg. Co.
 3. A. G. CODE, B.A.Sc., Box 404, Niagara Falls S., Ont.
 3. C. R. COLE, B.A.Sc., Woodstock, Ont.
 1. G. A. COLQUHOUN, B.A.Sc., Ottawa, Ont.
Department of the Interior.
 4.*J. H. CRAIG, B.A.Sc., 43 Cuthbert Crescent, Toronto, Ont.
 3.*C. D. DEAN, B.A.Sc., 31 Hewitt Ave., Toronto, Ont.
With Imperial Oil Co.
 5. A. V. DELAPORTE, B.A.Sc.,
On Overseas Service.
 3. R. L. DOBBIN, B.A.Sc., Peterboro', Ont.
Waterworks Dept.

*Diploma with honours.

1910—Continued.

- 3.*W. P. DOBSON, M.A.Sc.,
With Hydro-Electric Power Com. Toronto, Ont.
- 3.*J. M. DUNCAN, B.A.Sc.,
On Overseas Service.
1. L. F. EADIE,
On Overseas Service.
2. V. H. EMERY, B.A.Sc.,
Mine Supt., Hollinger Mines. Timmins, Ont.
3. W. J. EVANS, B.A.Sc.,
With Hydro-Electric Power Comm. Toronto, Ont.
3. H. W. FAIRLIE,
Ry. Dept., The Northern Elec. & Mfg. Co. Montreal, Que.
- 3.*C. R. FERGUSON, B.A.Sc.,
Dominion Bridge Co. Toronto, Ont.
3. J. W. FERGUSON, B.A.Sc.,
Dominion Bridge Co. Toronto, Ont.
- 4.*J. B. K. FISKEN, B.A.Sc.,
With Darling & Pearson. Toronto, Ont.
1. A. W. FLETCHER, B.A.Sc.,
On Overseas Service.
- 1.*J. A. FLETCHER,
Assistant to D. W. Robinson, D.L.S. Fisher River, Man.
3. F. T. FLETCHER, B.A.Sc.,
Dept. of Public Works. Calgary, Alta.
3. T. R. C. FLINT, B.A.Sc. 12 Galley Ave., Toronto, Ont.
3. R. C. FOLLETT,
2. J. M. FOREMAN, B.A.Sc. Toronto, Ont.
1. W. J. FOSTER.
- 3.*W. C. FOULDS, B.A.Sc.,
Imperial Munitions Board. Toronto, Ont.
1. A. FRASER, B.A.Sc. (deceased)
2. J. FREDIN,
c/o B.C. Copper Co. Princeton, B.C.
3. H. GALL, B.A.Sc., 6 Jameson Ave., Toronto, Ont.
1. M. M. GIBSON, B.A.Sc.,
Gibson & Gibson, O.L.S., C.E. Toronto, Ont.
1. J. M. GIBSON, B.A.Sc., 429 Grace Street, Toronto, Ont.
1. V. A. E. GOAD, B.A.Sc.,
Chas. E. Goad Co. Montreal, P.Q.
3. V. S. GOODEVE, Phoenix, B.C.
1. H. GOODRIDGE, Edmonton, Alta.
2. W. A. GORDON, Wallaceburg, Ont.
3. V. F. GOURLAY, B.A.Sc.,
Manufacturer. Galt, Ont.
3. E. B. GRAHAM, B.A.Sc., Pittsburgh, Pa.
2. R. L. GREENE, B.A.Sc.,
On Overseas Service.
5. J. H. HARRIS, B.A.Sc.,
W. Harris & Co. Danforth Ave., Toronto, Ont.
1. N. J. HARVIE, B.A.Sc. (Killed in action, France, 1916).
1. J. G. HELLIWELL (Killed in action, France, 1915).
1. J. F. HENDERSON,
On Overseas Service.
3. F. G. HICKLING, B.A.Sc.,
Westinghouse Electric & Manufacturing Co. East Pittsburgh, Pa.

*Diploma with honours.

1910—Continued.

1. E. F. HINCH, 127 Delaware Ave., Toronto, Ont.
1. O. H. HOOVER, B.A.Sc.,
On Overseas Service.
2. P. E. HOPKINS, B.A.Sc., Toronto, Ont.
With Ontario Bureau of Mines.
- 3.*W. J. IRWIN,
2. F. L. JAMES, B.A.Sc., Tillsonburg, Ont.
3. E. A. JAMIESON, Vancouver, B.C.
MacAndrew & Jamieson Eng. Co.
1. H. C. JOHNSTON, 509 Palmerston Ave., Toronto, Ont.
1. R. H. JOHNSTON, B.A.Sc., 10162 116th St., Edmonton, Alta.
1. J. C. KEITH, B.A.Sc., Moose Jaw, Sask.
City Engineer's Office.
- 2.*J. T. KING, B.A.Sc., Toronto, Ont.
Lecturer in Mining Engineering, University of Toronto.
3. G. A. KINGSTONE, B.A.Sc.,
On Overseas Service.
2. G. L. KIRWAN, B.A.Sc., Ottawa, Ont.
Topographical Surveys Br., Dept. of Interior.
5. P. T. KIRWAN, B.A.Sc., Ottawa, Ont.
Chemist, Inland Revenue Dept.
1. S. KNIGHT, B.A.Sc., Bruce Mines, Ont.
3. E. R. LAWLER, Toronto, Ont.
Hydro-Electric Power Comm., 190 University Ave.
- 3.*C. B. LEAVER, B.A.Sc., Dartmouth, N.S.
Asst. Superintendent, Imperial Oil Co.
3. R. G. LEE, B.A.Sc., Toronto, Ont.
Toronto-Hydro Electric System, 226 Yonge Street.
1. J. N. LEITCH (deceased).
1. J. C. LONGSTAFF,
On Overseas Service.
3. J. B. MACDONALD, B.A.Sc., Victoria, B.C.
With Cameron Lumber Co., Ltd.
2. A. D. MACDONALD, B.A.Sc.,
On Overseas Service.
1. J. A. MACDONALD, B.A.Sc., Ridgetown, Ont.
Private Practice.
1. G. A. MACDONALD, B.A.Sc., Vancouver, B.C.
Private Practice.
1. A. E. MACGREGOR, B.A.Sc., Simcoe, Ont.
1. E. G. MACKAY, B.A.Sc.,
On Overseas Service.
1. G. G. MACLENNAN, B.A.Sc. (Killed in action, France, 1917).
1. D. D. MACLEOD, B.A.Sc. (Died of wounds received in action, France, 1916).
3. H. G. MACMURCHY, B.A.Sc., Messina, N.Y.
- 3.*H. J. MACTAVISH, B.A.Sc.,
On Overseas Service.
4. T. C. MCBRIDE, B.A.Sc., Calgary, Alta.
1. S. G. MCDUGALL, B.A.Sc., 47 Vittoria Street, Ottawa, Ont.
- 1.*T. A. MCELHANNEY, B.A.Sc., Ottawa, Ont.
Special Surveys Br.
- 1.*P. J. MCGARRY, D. & O.L.S., Toronto, Ont.

*Diploma with honours.

1910—Continued.

- 3.*L. R. MCKIM, Brantford, Ont.
 1.*J. MCNIVEN, B.A.Sc.,
On Overseas Service.
3. J. I. MCSLOY, B.A.Sc., St. Catharines, Ont.
 2. A. W. R. MAISONVILLE, B.A.Sc., Montreal, Que.
Dominion Bridge Co.
- 1.*N. MARR, B.A.Sc., Campbellford, Ont.
Res. Engr., Trent Canal.
- 1.*W. H. MARTIN, B.A.Sc., Toronto, Ont.
With Curry & Sparling, Architects.
2. A. C. MATTHEWS, B.A.Sc.,
On Overseas Service.
1. C. H. MEADER, B.A.Sc., O.L.S., Toronto, Ont.
 3.*H. O. MERRIMAN, B.A.Sc.,
On Overseas Service.
- 1.*D. J. MILLER,
On Overseas Service.
1. F. S. MILLIGAN, B.A.Sc.,
On Overseas Service.
3. P. E. MILLS, B.A.Sc., 320 W. 56th St., New York, N.Y.
 3. J. P. MORGAN, Toronto, Ont.
With Orpen Construction Co.
1. F. R. MORTIMER, B.A.Sc., Ottawa, Ont.
Hydrographic Survey, Dept. of Naval Service.
1. A. H. MUNRO, B.A.Sc., 352 Brock St., Peterborough, Ont.
 3. J. C. NASH, B.A.Sc.,
On Overseas Service.
- 1.*V. A. NEWHALL, B.A.Sc., Edmonton, Alta.
Dept. of Interior.
- 2.*W. E. NEWTON, B.A.Sc., Sandon, B.C.
Slocan Star Mines.
1. F. T. NICHOL, B.A.Sc., Toronto, Ont.
Archibald & Holmes.
1. C. M. O'NEIL, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
3. C. E. PALMER, B.A.Sc., E.E., Toronto, Ont.
Bell Telephone Co.
3. G. C. PARKER, M.A.Sc., Toronto, Ont.
Roadways Branch, Dept. of Public Works.
3. K. K. PEARCE, B.A.Sc., Lachine, Que.
Dominion Bridge Co.
1. A. W. PEARSON, Weston, Ont.
 3. C. H. PHILLIPS, B.A.Sc., 85 Manchester Place, Buffalo, N.Y.
 1. D. E. PYE, Cranbrook, B.C.
 1. W. S. RAMSAY, B.A.Sc., 86 Robert St., Toronto, Ont.
 3. B. J. REDFERN (deceased).
 3. C. E. RICHARDSON, B.A.Sc., Toronto, Ont.
 1. H. C. RITCHIE, Calgary, Alta.
Dept. of Public Works.
1. O. W. ROSS, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1910—Continued.

1. W. F. RUBIDGE, Matheson, Ont.
Abitibi Power & Paper Co., Ltd.
3. W. C. SHAW, B.A.Sc., Toronto, Ont.
A. L. Torgis Garage.
3. N. C. SHERMAN,
On Overseas Service.
- 1.*W. C. SMITH, B.A.Sc., C.E., Victoria, B.C.
Engineer, Water Rights Branch, Dept. of Lands.
2. F. L. SMITH,
On Overseas Service.
5. G. E. SMITH, B.A.Sc., Bozeman, Mont.
Agricultural College.
2. R. J. SPRY, B.A.Sc., Eustis Mine, Que.
2. A. L. STEELE, B.A.Sc., Fergus, Ont.
- 2.*H. M. STEVEN, B.A.Sc., 83 St. Clair Ave. West, Toronto, Ont.
- 1.*L. I. STONE, Toronto, Ont.
Resident Engineer, G.T. Ry.
3. A. L. SUTHERLAND, B.A.Sc., Toronto, Ont.
With Canadian General Electric Co.
3. E. A. TERNAN, B.A.Sc., Arthur, Ont.
- 5.*W. H. THOM, Toronto, Ont.
Factory Manager, Lyman Bros. & Co.
3. H. B. THOMPSON, B.A.Sc., Sarnia, Ont.
Engineering Dept., Imperial Oil Co.
3. R. M. A. THOMPSON, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Com.
- 2.*C. G. TITUS, Renfrew, Ont.
Renfrew Molybdenum Co.
3. K. M. VAN ALLEN, B.A.Sc. (Died of wounds in German prison camp, 1916).
1. L. T. VENNEY, B.A.Sc., Windsor, Ont.
With Morris Knowles, Sanitary Engineer.
1. N. WAGNER, 19 Gerrard St. E., Toronto, Ont.
Bridge Dept., Canada Foundry Co.
1. R. M. WALKER, B.A.Sc., Box 86, Hawkesbury, Ont.
2. T. WALTON, B.A.Sc. (deceased).
1. G. A. WARRINGTON, B.A.Sc., Winnipeg, Man.
M.L.S., Parliament Bldgs.
3. M. B. WATSON, B.A.Sc., M.E., Toronto, Ont.
Director of Engineering, Central Technical School.
- 3.*H. M. WHITE, Lachine Locks, Que.
With Dominion Bridge Co.
1. J. L. WHITSIDE, B.A.Sc., (died of wounds received in action, 1916).
4. W. S. WICKENS, B.A.Sc., Toronto, Ont.
With Canadian Fire Underwriters Association.
- 3.*G. K. WILLIAMS, B.A.Sc. (Killed in collision at Luxeuil, while on active service, 1916).
- 1.*W. H. WILSON, B.A.Sc., Toronto, Ont.
Estimator, McGregor & McIntyre, Ltd.
3. G. E. WOODLEY (deceased).
1. G. R. WORKMAN, Toronto, Ont.

*Diploma with honours.

1910—Continued.

3. L. A. WRIGHT, B.A.Sc., 278 Jarvis St., Toronto, Ont.
Asst. Engineer, C.P.R.
 3.*A. W. YOEELL, B.A.Sc. (died of wounds received in France, 1918.)
 1. W. S. YOUNG, B.A.Sc., Guelph, Ont.

1911.

- 5.*J. AITKEN, B.A.Sc., Brantford, Ont.
Chemist, Malleable Iron Works.
 1. L. B. ALLAN, B.A.Sc., Toronto, Ont.
 3. E. G. ARCHER, B.A.Sc., Toronto, Ont.
With H.E.P.C.
 1. L. A. BADGLEY, B.A.Sc., Toronto, Ont.
Architectural Dept., City Hall.
 1. T. H. BARTLEY, B.A.Sc., O.L.S., Toronto, Ont.
 2.*H. L. BATTEN,
On Overseas Service.
 1. G. L. BERKELEY,
On Overseas Service.
 3.*J. H. BILLINGS, B.A.Sc., S.M., Weston, Ont.
Lecturer on Machine Design, University of Toronto.
 2.*J. R. BISSETT, B.A.Sc., Ottawa, Ont.
Water Power Branch, Dept. of Interior.
 3. W. O. BOSWELL, B.A.Sc. (Died of Pleuro-Pneumonia while on active service, 1919).
 1. F. BOWMAN, Lachine, Que.
Dominion Bridge Co.
 3. T. W. BRACKINREID, B.A.Sc., Winnipeg, Man.
Canadian General Electric Co.
 2. W. M. BROCK, B.A.Sc.,
On Overseas Service.
 1. W. H. D. BROUSE, B.A.Sc., Toronto, Ont.
With Gordon C. Edwards.
 3. H. O. BROWN, B.A.Sc., Toronto, Ont.
James, Loudon & Hertzberg, Ltd.
 3.*E. T. CAIN, B.A.Sc., Moncton, N.B.
Canadian Government Railways.
 1. C. S. CAMERON, Regina, Sask.
 1. C. D. CAMPBELL, Hamilton, Ont.
Manager, Hamilton Securities, Ltd.
 6.*W. W. CHADWICK, B.A.Sc., Hamilton, Ont.
Asst. Manager, Canadian Chadwick Metal Co.
 1. R. B. CHANDLER, B.A.Sc., Whalen Building, Port Arthur, Ont.
 1. P. G. CHERRY, B.A.Sc., Toronto, Ont.
Advertising Sales Manager, Might Directories, Ltd.
 3. E. F. CHESNUT, B.A.Sc., Toronto, Ont.
Instructor, Invalided Soldiers' Commission.
 1. H. J. CLARK, B.A.Sc., Toronto, Ont.
Dept. of Public Highways.
 1. F. W. CLARK, 669 Spadina Ave., Toronto, Ont.
With Hydro-Electric Power Commission.
 3. F. S. CLEARY (deceased).
 2.*D. B. COLE, B.A.Sc., Cleveland, Ohio
Cleveland Cadillac Co.

*Diploma with honours.

1911—Continued.

- 3.*A. S. COOK, B.A.Sc., Cleveland, Ohio.
Superintendent, Construction Dept., Geo. R. Cook Co.
1. C. W. CORNELL, Toronto, Ont.
Imperial Ministry of Munitions.
1. M. E. CROUCH, 14 Algoma St., Port Arthur, Ont.
3. W. M. CRUTHERS, B.A.Sc., Peterboro', Ont.
Can. Gen. Electric Co.
1. O. F. CUMMINS, Regina, Sask.
Provincial Drainage Engineer
3. T. J. CUNERTY, 165 Broadway, New York, N.Y.
With Westinghouse Electric & Mfg. Co.
1. C. H. CUNNINGHAM, B.A.Sc., Hamilton, Ont.
1. J. H. CURZON, 178 Kingston Rd., Toronto, Ont.
Instructor, Invalided Soldiers' Commission.
- 3.*F. K. D'ALTON, B.A.Sc., Toronto, Ont.
H.E.P.C. Laboratories.
1. W. B. DAVIS, B.A.Sc., Frankford, Ont.
Trent Valley Canal.
3. F. C. DEGUERRE, B.A.Sc. (deceased).
5. L. W. DONCASTER, Toronto, Ont.
With Ault & Wiborg Co.
- 3.*F. H. DOWNING,
On Overseas Service.
1. W. B. DUNBAR, B.A.Sc.,
On Overseas Service.
5. C. H. ECKERT, B.A.Sc., 434 Queen's Ave., London, Ont.
3. J. A. ELLIOT, B.A.Sc., Niagara Falls, N.Y.
Castner Electrolytic Alkali Co.
1. G. R. ELLIOTT, B.A.Sc., Canmore, Alta.
Mine Engineer, Canmore Coal Co.
1. C. F. ELLIOTT, B.A.Sc.,
On Overseas Service.
1. K. A. FARRELL, B.A.Sc.,
On Overseas Service.
3. T. J. FARRELLY,
On Overseas Service.
1. S. E. FLOOK, B.A.Sc., Port Arthur, Ont.
O. L. Surveyor and Civil Engineer.
3. C. C. FLYNN, London, Ont.
5. E. L. FRANKEL, B.A.Sc., Toronto, Ont.
Frankel Bros.
2. E. E. FREELAND, B.A.Sc.,
On Overseas Service.
1. J. R. FREEMAN, B.A.Sc.,
On Overseas Service.
- 4.*H. P. FRID, B.A.Sc.,
On Overseas Service.
- 3.*R. J. FULLER, B.A.Sc., Toronto, Ont.
Chief Engineer, John V. Gray Const. Co., Ltd.
- 5.*J. L. GOODERHAM, B.A.Sc., Toronto, Ont.
General Distilling Co.
3. R. E. GREEN, B.A.Sc., Toronto, Ont.
3. E. A. GREENE, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1911—Continued.

3. H. G. HALL, Woodstock, Ont.
With Hydro-Electric Power Commission.
1. G. M. HAMILTON, B.A.Sc., New Hamburg, Ont.
2. H. E. HARCOURT, 208 Dundas St. E., Toronto, Ont.
3. M. B. HASTINGS,
On Overseas Service.
2. M. B. HEEBNER, B.A.Sc., Coquitlam, B.C.
With The Foundation Co.
2. F. I. HELSON, Newburgh, Ont.
With C.N. Ry.
3. H. R. HILL, B.A.Sc., Toronto, Ont.
Hydro-Electric System.
1. A. J. HUFF, B.A.Sc.,
On Overseas Service.
1. K. HUFFMAN, Toronto, Ont.
- 1.*H. HYATT, B.A.Sc., Philadelphia, Pa.
With C. H. Wheeler Mfg. Co.
- 1.*R. H. JARVIS, B.A.Sc. (Accidentally killed while on overseas service,
1918).
- 1.*L. E. JONES,
On Overseas Service.
- 1.*E. A. KELLY, Winnipeg, Man.
Construction Dept., C.P.R.
- 3.*M. KIRKWOOD, B.A.Sc., New York, N.Y.
Am. Telephone and Telegraph Co.
- 2.*J. LANNING, B.A.Sc., Whitby, Ont.
Manager, Ford Garage.
1. N. LAWLESS, (died of pneumonia, France, 1915).
3. W. R. LETHBRIDGE.
2. M. I. LIEBERMAN, B.A.Sc., 700 Queen Street W., Toronto, Ont.
3. G. L. LILLIE, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
6. A. L. LONG, B.A.Sc., Toronto, Ont.
Long Chemical Co.
- 1.*A. W. P. LOWRIE, B.A.Sc.,
On Overseas Service.
7. W. M. MACANDREW, B.A.Sc., Vancouver, B.C.
MacAndrew & Jamieson Eng. Co.
- 3.*R. V. MACAULAY, B.A.Sc., Toronto, Ont.
- 2.*J. T. MACBAIN, Niagara Falls, N.Y.
Union Carbide Co.
- 1.*R. E. A. MACBETH, B.A.Sc. (Accidentally killed while on overseas
service, 1918).
1. F. M. MACDONALD, B.A.Sc. 3 Rusholme Rd., Toronto, Ont.
- 3.*W. S. MACKENZIE, Woodstock, Ont.
With Canadian Linderman Co., Ltd.
5. J. A. MACKINNON, B.A.Sc., Calgary, Alta.
- 1.*J. G. MACLAURIN, B.A.Sc., Box 621, Sault Ste. Marie, Ont.
1. J. B. MCANDREW, B.A.Sc.,
On Overseas Service.
- 3.*J. A. MCEACHREN, Strathburn, Ont.
3. R. W. MCELROY, B.A.Sc., Toronto, Ont.
3. H. J. MCEWEN, B.A.Sc. Brantford, Ont.
- 3.*W. G. MCGHIE, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1911—Continued.

3. D. A. MCKENZIE, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Com.
2. A. J. McLAREN, B.A.Sc.,
On Overseas Service.
3. A. G. McLEISH Toronto, Ont.
Private Practice.
- 1.*R. A. McLELLAN, B.A.Sc., Saskatoon, Sask.
With Murphy & Underwood.
2. W. B. McPHERSON, B.A.Sc., 6 Meredith Crescent, Toronto, Ont.
3. A. A. McQUEEN, B.A.Sc.,
- 4.*H. H. MADILL, B.A.Sc., Mem.O.A.A., Toronto, Ont.
Lecturer in Architecture, University of Toronto.
3. J. C. MARTIN, B.A.Sc., Toronto, Ont.
With Hydro-Electric System.
3. C. A. MEADOWS, B.A.Sc., 6 Sussex Ave., Toronto, Ont.
Geo. B. Meadows Co.
1. L. G. MILLS, B.A.Sc., 89 Glen Road, Toronto, Ont.
5. L. C. MITCHELL, Bay City, Mich.
2. J. A. MORPHY, B.A.Sc.,
On Overseas Service.
1. M. H. MURPHY, B.A.Sc., Toronto, Ont.
Contractor.
1. J. C. MURTON,
On Overseas Service.
3. E. H. NIEBEL, B.A.Sc., Regina, Sask.
Northern Electrical Co.
3. C. K. NIXON, B.A.Sc., Detroit, Mich.
3. E. S. NOBLE, B.A.Sc., Toronto, Ont.
1. R. K. NORTHEY, B.A.Sc.,
On Overseas Service.
2. W. A. O'FLYNN, B.A.Sc., Cobalt, Ont.
Temiskaming Mine.
1. W. V. OKE, B.A.Sc.,
On Overseas Service.
2. J. A. ORR, B.A.Sc., Clarkson's, Ont.
3. J. S. PARKER, B.A.Sc., Toronto, Ont.
With Hydro-Electric System.
- 3.*J. H. PARKIN, B.A.Sc., Toronto, Ont.
Lecturer in Mechanical Engineering, University of Toronto.
- 1.*J. McD. PATTON, B.A.Sc., Toronto, Ont.
3. C. L. PEARSON, Calgary, Alta.
With City of Calgary.
2. S. J. PEPLER. (Killed in action, France, 1917).
- 3.*W. J. PERRIN, B.A.Sc. (deceased).
1. B. W. PICK, B.A.Sc., Regina, Sask.
With Smith & Phillips.
- 3.*E. H. PORTE, Toronto, Ont.
With Hydro-Electric Power Commission.
- 1.*F. M. PRATT, B.A.Sc., 343 Nepean Street, Ottawa, Ont.
4. H. PULLAN, Toronto, Ont.
With E. Pullan.
1. L. J. QUINLAN, B.A.Sc., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.

*Diploma with honours.

1911—Continued.

1. L. W. RAILTON,
On Overseas Service.
- 1.*J. E. RATZ, B.A.Sc., Elmira, Ont.
1. F. N. READ, B.A.Sc. (Killed in action, Passchendaele, 1917).
4. E. V. REID (Killed in action, France, 1917)
- 1.*W. A. RICHARDSON, B.A.Sc., 1135 Catherine St., Victoria, B.C.
- 1.*W. E. ROBINSON, B.A.Sc.,
On Overseas Service.
1. H. L. ROBLIN, B.A.Sc.,
On Overseas Service.
3. L. W. ROTHERY, B.A.Sc., East Pittsburg, Pa.
Westinghouse Machine Co.
- 4.*T. L. F. ROWE, Whitby, Ont.
Structural Engineer, Hospital for Insane.
3. A. S. RUNCIMAN, Marconi Towers, Glace Bay, C.B.
3. F. G. RUTLEY, B.A.Sc., Sydney, N.S.
Foundation Co. of Montreal.
1. E. M. SALTER, 901 Boyd Bldg., Winnipeg, Man.
1. F. R. SCANDRETT, B.A.Sc., Belgrave, Ont.
5. MISS H. E. SCOTT, B.A.Sc. Forest, Ont.
- 5.*J. W. SCOTT, B.A.Sc.,
Resident Engineer, Hudson Bay Ry.
3. N. D. SEATON, B.A.Sc., 360 Stewart St., Peterboro, Ont.
With General Electric Co.
1. N. SHARPE, 501 Tribune Bldg., Winnipeg, Man.
Greater Winnipeg Water District.
- 4.*P. SHEARD, B.A.Sc., 314 Jarvis Street, Toronto, Ont.
- 1.*W. A. SIBBETT,
On Overseas Service.
- 2.*C. P. SILLS, B.A.Sc., Seaforth, Ont.
- 1.*K. H. SMITH, Ottawa, Ont.
Water Power Branch, Dept. of the Interior.
3. M. L. SMITH, B.A.Sc. (deceased).
1. R. G. SNEATH,
On Overseas Service.
- 3.*G. E. SQUIRE, B.A.Sc., Toronto, Ont.
3. W. S. STEELE, B.A.Sc. (deceased).
- 5.*A. E. STEWART, B.A.Sc.,
On Overseas Service.
- 3.*R. O. STEWART, B.A.Sc., Moncton, N.B.
Bridge Dept., Intercolonial Ry.
- 3.*R. A. STORY, B.A.Sc.,
On Overseas Service.
1. C. F. SZAMMERS,
On Overseas Service.
3. R. TAYLOR, B.A.Sc.,
On Overseas Service.
1. J. B. TEMPLE, B.A.Sc., 438 Gladstone Ave., Toronto, Ont.
3. G. C. THOMAS,
On Overseas Service.
1. R. D. TORRANCE, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1911—Continued.

1. W. G. TOUGH, B.A.Sc. (Died of wounds received in action, Sept. 1918).
- 1.*N. VICKERS. (Died of wounds received in action, April 1917).
2. J. H. C. WAITE, B.A.Sc., Toronto, Ont.
Consulting Engineer.
1. W. D. WALCOTT, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
3. G. L. WALLACE, B.A.Sc., Toronto, Ont.
Demonstrator in Physics, University of Toronto.
1. A. WARDELL, B.A.Sc., Toronto, Ont.
1. F. E. WATSON, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
- 3.*P. G. WELFORD, B.A.Sc., Guelph, Ont.
White Sewing Machine Co.
2. A. G. WHEELER, B.A.Sc., Jackson's Point, Ont.
3. G. H. WILKES, B.A.Sc.,
On Overseas Service.
- 5.*E. R. WILLIAMS,
On Overseas Service.
- 3.*H. A. WILSON, Glenora, Ont.
Supt., J. C. Wilson & Co., Mechanical Engineers.
3. C. S. WOOD, Courtenay, B.C.
Electrical Engineer.
1. W. G. WORDEN, B.A.Sc., Oshawa, Ont.
Town Engineer.
- 1.*W. J. T. WRIGHT, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto
1. F. H. WRONG, B.A.Sc., D.L.S.,
On Overseas Service.
2. W. H. WYLIE, B.A.Sc.,
On Overseas Service.
3. H. K. WYMAN, Essex, Ont.
3. L. P. YORKE,
On Overseas Service.
1. S. YOUNG, B.A.Sc., D. & S.L.S., Regina, Sask.
Public Works Dept.
- 3.*A. YOUNG, B.A.Sc., Toronto, Ont.
Instructor, Technical High School.
1. W. E. ZINKAN, 865 24th St., Edmonton, Alta.
Dominion Land Surveyor.

Owing to change of course from three to four years, there were no graduates in 1912.

1913.

From this date onward "3" denotes Mechanical Engineering and "7" Electrical Engineering.

- 7.*R. J. ALLEN, B.A.Sc., Cleveland, Ohio.
Rolls-Royce Co.
- 3.*A. S. ANDERSON, B.A.Sc., (killed in action, France, 1916)
- 1.*C. R. AVERY, M.A.Sc., 361 Crawford St., Toronto, Ont.

*Degree with honours.

1913—Continued.

- 4.*L. C. M. BALDWIN, B.A.Sc.,
On Overseas Service.
1. F. W. BEATTY, B.A.Sc.,
On Overseas Service.
- 1.*W. B. BEATTY, B.A.Sc., O.L.S., Haliburton, Ont.
Beatty & Wilkins.
2. C. A. BELL, B.A.Sc., 19 Farnham Avenue, Toronto, Ont.
7. R. S. BELL, B.A.Sc., 10 Stair Ave., Toronto, Ont.
2. R. E. BINNS, B.A.Sc., 18 Dorville Rd., Lee, London, S.E.
- 1.*B. S. BLACK, B.A.Sc., 197 Madison Ave., Toronto, Ont.
1. D. BLAIN, B.A.Sc., 42 Clarendon Ave., Toronto, Ont.
7. E. R. BONTER, B.A.Sc., Montreal, Que.
Canadian Crocker-Wheeler Co.
- 7.*L. R. BRERETON, B.A.Sc.,
On Overseas Service.
4. B. BROWN, B.A.Sc., 305 Manning Chambers, Toronto, Ont.
Architect.
2. T. R. BUCHANAN, B.A.Sc., Thessalon, Ont.
- 7.*W. B. BUCHANAN, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
3. B. H. A. BURROWS, B.A.Sc., (killed in action, France, 1916).
2. W. B. CALDWELL, B.A.Sc.,
On Overseas Service.
1. O. L. CAMERON, B.A.Sc. (Died of wounds, France, 1918).
1. L. L. CAMPBELL, B.A.Sc., Orangeville, Ont.
- 3.*R. M. CARMICHAEL, B.A.Sc., Kenora, Ont.
1. G. M. CARRIE, B.A.Sc.,
On Overseas Service.
2. H. A. CLARK, B.A.Sc., Toronto, Ont.
- 6.*G. E. CLARKSON, B.A.Sc., Scunthorpe, England.
Asst. Supt. Frodingham Iron & Steel Co.
- 3.*B. D. CLEGG, B.A.Sc., 295 Stewart St., Peterborough, Ont.
7. J. H. COLEMAN, B.A.Sc., 17 Farnham Ave., Toronto, Ont.
- 1.*G. M. COOK, B.A.Sc., Youngstown, Ohio.
Chief Estimator, Truscon Steel Co.
1. J. A. COOMBS, B.A.Sc., 393 Ossington Ave., Toronto, Ont.
- 4.*B. R. COON, B.A.Sc., Toronto, Ont.
Canadian Aeroplanes, Ltd.
2. W. T. CURTIS, B.A.Sc., Tillsonburg, Ont.
1. A. J. DATES, B.A.Sc., Detroit, Mich.
With Fisher Boddy Co.
3. H. D. DAVISON, B.A.Sc., Port Weller, Ont.
Section 1, Welland Ship Canal.
7. E. L. DEITCH, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Com.
- 2.*R. W. DIAMOND, B.A.Sc., Anaconda, Mont.
Anaconda Mining Co.
7. W. G. DUNCAN, B.A.Sc., Port Dover, Ont.
1. F. R. FIDDES, B.A.Sc., Detroit, Mich.

*Degree with honours.

1913—Continued.

1. D. H. FLEMING, B.A.Sc., Toronto, Ont.
Sewers Dept. City Hall.
3. F. F. FOOTE, B.A.Sc., Port Dalhousie, Ont.
- 1.*J. S. GALBRAITH, B.A.Sc., 150 Albany Ave., Toronto, Ont.
2. W. H. GARNHAM, B.A.Sc., Cayuga, Ont.
1. A. M. GERMAN, B.A.Sc.,
On Overseas Service.
1. H. M. GOODMAN, B.A.Sc.,
On Overseas Service.
1. A. G. GRAY, B.A.Sc.,
On Overseas Service.
- 1.*E. R. GRAY, B.A.Sc., C.E., Hamilton, Ont.
City Engineer.
3. A. J. GRAY, B.A.Sc.
On Overseas Service.
7. J. P. HADCOCK, B.A.Sc., Peterboro, Ont.
Can. Gen. Elec. Co.
7. H. C. HARRIS, B.A.Sc.,
On Overseas Service.
1. H. A. HAWLEY, B.A.Sc., Toronto, Ont.
Lewis Construction Co.
- 1.*R. L. HEARN, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Com.
- 1.*H. J. HEINONEN, B.A.Sc., New York, N.Y.
Columbia University.
- 3.*R. A. HENRY, B.A.Sc., Collingwood, Ont.
Collingwood Shipbuilding Co.
- 7.*T. A. HILL, B.A.Sc., Ninga, Man.
- 1.*O. HOLDEN, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
1. J. T. HOWARD, B.A.Sc. (Died of wounds, France, 1918).
- 7.*T. F. HOWLETT, B.A.Sc.,
On Overseas Service.
1. E. T. IRESON, B.A.Sc., 144 Walmer Rd., Toronto, Ont.
1. G. R. JOHNSON, B.A.Sc.,
On Overseas Service.
1. R. L. JUNKIN, B.A.Sc., 165 Crescent Rd., Toronto, Ont.
- 7.*S. S. KELLY, B.A.Sc., Lambeth, Ont.
7. A. E. KERR, B.A.Sc., Hamilton, Ont.
Can. Westinghouse Co.
7. C. E. KILMER, B.A.Sc., 171 Crescent Rd., Toronto, Ont.
1. J. S. LAING, B.A.Sc.,
On Overseas Service.
7. A. LESLIE, B.A.Sc., 928 Second Ave. E., Owen Sound, Ont.
- 4.*H. D. LIVINGSTON, B.A.Sc. (Killed in action, August, 1918).
- 1.*K. F. MICKLEBOROUGH, B.A.Sc., Cornwall, Ont.
Dept. of Railways and Canals.
- 7.*G. J. MICKLER, B.A.Sc., Toronto, Ont.
Hydro-Electric Commission.
1. N. C. MILLMAN, B.A.Sc.
On Overseas Service.
1. F. J. MULQUEEN, B.A.Sc., Sao Paulo, Brazil.

*Degree with honours.

1913—Continued.

- 1.*W. C. MURDIE, M.A.Sc., D.L.S., F.R.G.S.,
Department of Interior. Ottawa, Ont.
2. D. A. S. MUTCH, B.A.Sc.,
Hollinger Mines. Timmins, Ont.
- 1.*H. R. MACKENZIE, B.A.Sc.,
Inspecting Engineer, Board of Highway Commissioners. Regina, Sask.
1. A. R. MACPHERSON, B.A.Sc.,
Petrolia, Ont.
- 6.*K. S. MACLACHLAN, B.A.Sc.,
Dist. Organizer under Director of Technical Education. Toronto, Ont.
1. W. H. MACTAVISH, B.A.Sc.
On Overseas Service.
1. T. V. MCCARTHY, B.A.Sc.,
With Hydro-Electric Power Comm. Toronto, Ont.
- 4.*R. S. McCONNELL, B.A.Sc.,
On Overseas Service.
1. W. L. McFAUL, B.A.Sc.,
On Overseas Service.
- 2.*K. L. NEWTON, B.A.Sc.,
Canadian Copper Co. Copper Cliff, Ont.
- 5.*C. J. OTTO, B.A.Sc.,
Gutta Percha and Rubber Mfg. Co., Toronto, Ont.
- 1.*N. F. PARKINSON, M.A.Sc.,
Dept. Soldiers' Civil Re-establishment. Ottawa, Ont.
- 7.*J. W. PEART, B.A.Sc.,
On Overseas Service.
- 1.*E. PERRON, B.A.Sc.,
Metabetchouan, Que.
1. H. C. QUAIL, B.A.Sc. (Killed in action, February, 1918).
- 7.*E. G. RATZ, B.A.Sc.,
With Canadian Westinghouse Co. Hamilton, Ont.
- 1.*J. M. RIDDELL, B.A.Sc.
On Overseas Service.
- 1.*J. E. RITCHIE, B.A.Sc.,
On Overseas Service.
- 1.*C. S. ROBERTSON, M.A.Sc.,
With John ver Mehr Eng. Co., Ltd. Toronto, Ont.
- 7.*C. C. ROUS, B.A.Sc.,
Royal Bank Bldg., Toronto, Ont.
Capt., Imperial Munitions Board, Head Inspector for Fuses.
7. C. H. RUSSELL, B.A.Sc.,
Can. Westinghouse Co. Hamilton, Ont.
- 7.*A. A. SCARLETT, B.A.Sc.,
Mount Charles, Ont.
- 1.*L. SEWELL, B.A.Sc.,
Cedar Grove, Ont.
- 7.*M. C. SHARP, B.A.Sc.,
On Overseas Service.
- 3.*K. E. SHAW, B.A.Sc.,
Dominion Sugar Co. Wallaceburg, Ont.
- 3.*F. R. SIMS, B.A.Sc.,
Dept. of Customs. Ottawa, Ont.
- 2.*D. G. SINCLAIR, B.A.Sc.,
145 Queen St., Sarnia, Ont.
- 4.*R. W. SOPER, B.A.Sc. (Killed in action, France, 1918).
1. W. A. SPELLMAN, B.A.Sc.,
City Engineer's Dept. Toronto, Ont.
- 7.*J. M. STRATHY, B.A.Sc., (killed in action, 1916).
1. D. SUTHERLAND, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1913—Continued.

1. R. TASKER, B.A.Sc., 57 Duke Street, Toronto, Ont.
 7.*D. J. THOMPSON, B.A.Sc., 86 Abbott Ave., Toronto, Ont.
 1.*J. M. THOMPSON, B.A.Sc., Mount Healy, Ont.
 2.*W. K. THOMPSON, B.A.Sc., Box 218, Trail, B.C.
 7. T. E. TORRANCE, B.A.Sc.,
On Overseas Service.
 2. R. M. TROW, B.A.Sc.,
On Overseas Service.
 1.*W. G. URE, B.A.Sc., Woodstock, Ont.
 1.*C. F. VON GUNTEN, B.A.Sc., Blenheim, Ont.
 3. R. E. WATTS, B.A.Sc. (Died of scarlet fever while on active service,
 1916).
 3.*C. A. WEBSTER, B.A.Sc., Galt, Ont.
Sheldons, Limited.
 4.*H. WEBSTER, B.A.Sc.,
On Overseas Service.
 1. D. H. WEIR, B.A.Sc.
On Overseas Service.
 1. W. S. WINTERS, B.A.Sc., 55 Bleecker St., Toronto, Ont.
 1. R. F. B. WOOD, B.A.Sc., 116 Crescent Rd., Toronto, Ont.
 7.*A. J. WRIGHT, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
 7. R. B. YOUNG, B.A.Sc., Toronto, Ont.
With H.E.P.C.

1914

1. E. M. ABENDANA, B.A.Sc. (Died while on active service, Oct. 1918).
 1.*F. C. ADSETT, B.A.Sc., Guelph, Ont.
 1.*J. L. ALTON, B.A.Sc., Toronto, Ont.
Dept. of Public Works for Ontario.
 2.*F. C. ANDREWS, B.A.Sc. (killed in action, France, 1915).
 7. C. E. ARMER, B.A.Sc., 38 Palmerston Gardens, Toronto, Ont.
With Ewart & Jacob, Elec. Engrs.
 2.*H. R. BANKS, B.A.Sc., 787 Markham St., Toronto, Ont.
 1. E. L. BEDARD, B.A.Sc.,
On Overseas Service.
 1.*H. J. BEDARD, B.A.Sc., Port Lambton, Ont.
 1. J. T. BELCHER, B.A.Sc., Guelph, Ont.
With H.E.P.C.
 1. S. G. BENNETT, B.A.Sc., 16 Howland Ave., Toronto, Ont.
 1. P. V. BINNS, B.A.Sc. (Killed in action, France, 1918).
 1.*J. M. BLYTH, B.A.Sc., R.R. No. 3, Durham, Ont.
 5. A. R. BONHAM, B.A.Sc., 47 Harbord Street, Toronto, Ont.
Laboratory, Provincial Board of Health.
 1.*J. H. W. BOWER, B.A.Sc., Ottawa, Ont.
Gen. Supt., Military Hospitals Comm.
 3.*H. H. BROWN, B.A.Sc., Ottawa, Ont.
Steel Dept., Imperial Munitions Board.

*Degree with honours.

1914—Continued.

- 7.*W. D. BROWN, B.A.Sc., Owen Sound, Ont.
 1.*D. H. CAMPBELL, B.A.Sc., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
 3.*H. M. CAMPBELL, B.A.Sc., St. Catharines, Ont.
Draftsman, Welland Ship Canal.
 1.*J. J. CAMPBELL, B.A.Sc. (Died of wounds received in action, France, 1917).
 6.*C. N. CANDEE, B.A.Sc., 39 South Drive, Toronto, Ont.
 2. R. T. CARLYLE, B.A.Sc., Toronto, Ont.
 2. J. M. CARTER, B.A.Sc.,
On Overseas Service.
 2. E. V. CHAMBERS, B.A.Sc., 126 St. George St., Toronto, Ont.
 1.*R. M. CHRISTIE, B.A.Sc., 9847 91st Ave., Edmonton South, Alta.
 3. K. M. CLIPSHAM, B.A.Sc., Toronto, Ont.
Clipsham & Delamere.
 7. C. E. B. CORBOULD, B.A.Sc.,
On Overseas Service.
 3.*E. D. W. COURTICE, B.A.Sc., 107 Bay St. S., Hamilton, Ont.
 1. J. W. CRASHLEY, B.A.Sc., 28 Madison Ave., Toronto, Ont.
 7*A. W. CRAWFORD, B.A.Sc., Sarnia, Ont.
 1.*W. CUTHBERTSON, B.A.Sc.,
On Overseas Service.
 1. G. F. DALTON, B.A.Sc.,
On Overseas Service.
 1.*R. DASHWOOD, B.A.Sc.
On Overseas Service.
 1.*R. D. DAVIDSON, B.A.Sc.,
On Overseas Service.
 3. R. D. DELAMERE, B.A.Sc., 39 Heath St. W., Toronto, Ont.
 1.*F. W. DOUGLAS, B.A.Sc., 276 Palmerston Ave., Toronto, Ont.
 7. H. C. EDWARDS, B.A.Sc., Toronto, Ont.
 7.*H. F. ELLIOTT, B.A.Sc., Norwood, Ont.
 1. J. A. ELLIOTT, B.A.Sc., Box 215, Nelson, B.C.
 2.*S. D. ELLIS, B.A.Sc. (Died after operation, while on overseas service, 1916).
 1.*H. E. EYRES, B.A.Sc., Peterborough, Ont.
 1.*O. M. FALLS, B.A.Sc., Toronto, Ont.
With James, Loudon & Hertzberg, Ltd.
 7. D. G. FERGUSON, B.A.Sc., 36 Owaissa St., St. Thomas, Ont.
 1. G. O. FLEMING, B.A.Sc.,
On Overseas Service.
 2. J. S. FLEMING, B.A.Sc. (Killed in action, France, 1916).
 1.*J. L. FOREMAN, B.A.Sc.,
On Overseas Service.
 7.*H. J. FRANKLIN, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
 5.*J. G. G. FROST, B.A.Sc., Welland, Ont.
Asst. Chemist, Metals-Chemical Co.
 1. C. H. R. FULLER, B.A.Sc., 106 Kendal Ave., Toronto, Ont.
 7.*E. I. GILL, B.A.Sc., Victoria Harbour, Ont.
 2.*J. R. GILL, B.A.Sc., Sudbury, Ont.

*Degree with honours.

1914—Continued.

1. R. W. GOUINLOCK, B.A.Sc.
On Overseas Service.
7. C. I. GRIERSON, B.A.Sc., Hamilton, Ont.
With Imperial Oil Company.
- 3.*W. H. HALL, B.A.Sc., 813 Water St., Peterborough, Ont.
- 3.*G. H. HALLY, B.A.Sc., Toronto, Ont.
Demonstrator in Mechanical Engineering, University of Toronto.
- 1.*J. J. HANNA, B.A.Sc., 350 15th Ave. W., Calgary, Alta.
1. J. H. HAWES, B.A.Sc.
On Overseas Service.
- 1.*L. T. HAYMAN, B.A.Sc.
On Overseas Service.
- 1.*B. B. HOGARTH, B.A.Sc.,
On Overseas Service.
4. E. E. H. HUGLI, B.A.Sc.,
On Overseas Service.
- 1.*S. A. HUSTWITT, B.A.Sc., 76 Roncesvalles Ave., Toronto, Ont.
2. W. HUTCHINGS, B.A.Sc., Cobalt, Ont.
Chemist, O'Brien Mine.
- 7.*A. S. JANNATI, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
- 1.*R. P. JOHNSON, B.A.Sc., Niagara Falls, Ont.
With Hydro-Electric Power Commission.
- 7.*J. I. KAMMAN, B.A.Sc.,
On Overseas Service.
1. J. KAY, B.A.Sc. (Died while on active service, 1918).
4. N. G. KEEFER, B.A.Sc., West Toronto, Ont.
3. H. S. KERBY, B.A.Sc.,
On Overseas Service.
3. J. A. KERR, B.A.Sc., Toronto, Ont.
Polson Iron Works.
7. G. E. KEWIN, B.A.Sc., Toronto, Ont.
Canadian Inspection Co.
1. J. A. KNIGHT, B.A.Sc.,
On Overseas Service.
- 2.*S. A. LANG, B.A.Sc. (Died at St. Johns, Que., while on active service,
Oct. 1918).
- 7.*C. W. LATIMER, B.A.Sc., Penticton, B.C.
- 1.*R. E. LINDSAY, B.A.Sc., Bolton, Ont.
7. N. H. LORIMER, B.A.Sc., 39 Wells Hill Ave., Toronto, Ont.
- 5.*O. G. LYE, B.A.Sc., Ottawa, Ont.
Laboratories Inland Revenue Dept.
- 2.*W. A. MACDONALD, B.A.Sc. (deceased).
3. B. MACKENDRICK, B.A.Sc.,
On Overseas Service.
- 2.*H. J. MACKENZIE, B.A.Sc.
On Overseas Service.
- 7.*A. M. MACKENZIE, B.A.Sc.,
On Overseas Service.
1. H. N. MACPHERSON, B.A.Sc., 2,306 Rose St., Regina, Sask.
- 3.*A. H. MACQUARRIE, B.A.Sc.
On Overseas Service.
- 7.*J. A. MARSHALL, B.A.Sc., Ryckmans, Ont.

*Degree with honours.

1914—Continued.

- 1.*J. A. P. MARSHALL, B.A.Sc.,
On Overseas Service.
- 7.*R. G. MATTHEWS, B.A.Sc.,
On Overseas Service.
- 3.*H. W. MAXWELL, B.A.Sc., 221 Wellington St., St. Mary's, Ont.
Geological Survey.
- 1.*R. C. McDONALD, B.A.Sc., Ottawa, Ont.
1. S. B. MCGILL, B.A.Sc., Toronto, Ont.
7. D. L. McLAREN, B.A.Sc., Peterborough, Ont.
With Canadian General Electric Co.
2. P. W. MEAHAN, B.A.Sc.,
On Overseas Service.
- 1.*F. C. MECHIN, B.A.Sc., Halifax, N.S.
Engineer, Imperial Oil Co.
- 1.*W. G. MILLAR, B.A.Sc., Toronto, Ont.
With Underwriters' Association.
- 1.*A. S. MILLER, B.A.Sc.,
On Overseas Service.
- 6.*W. E. MILLIGAN, B.A.Sc.,
On Overseas Service.
- 7.*P. H. MILLS, B.A.Sc.,
On Overseas Service.
- 1.*J. S. MITCHELL, B.A.Sc., Lucknow, Ont.
1. J. R. MONTAGUE, B.A.Sc., 633 Coristine Bldg., Montreal, Que.
With A. R. Henry, M.E.
6. D. MORRISON, B.A.Sc., Bowmanville, Ont.
1. G. J. MULLINS, B.A.Sc., Toronto, Ont.
Harbour Commissioners.
- 1.*E. P. MUNTZ, B.A.Sc., St. Catharines, Ont.
- 7.*C. L. NICHOLSON, B.A.Sc., 199 Concord Ave., Toronto, Ont.
Toronto Hydro-Electric System.
- 1.*J. B. NICHOLSON, B.A.Sc., Hamilton, Ont.
J. B. Nicholson, Ltd., Engineers & Contractors.
- 1.*C. NOECKER, B.A.Sc., Hamilton, Ont.
With Canadian Inspection Co.
1. J. A. OWENS, B.A.Sc., Toronto, Ont.
1. A. H. PARKER, B.A.Sc.,
On Overseas Service.
- 1.*R. G. PATTERSON, B.A.Sc.
On Overseas Service.
- 7.*J. D. PEART, B.A.Sc., Nelson, Ont.
1. C. W. PENNINGTON, B.A.Sc., Dundas, Ont.
- 1.*C. V. PERRY, B.A.Sc. (Killed in action, 1917).
- 5.*W. E. PHILLIPS, B.A.Sc.,
On Overseas Service.
8. G. O. PHILP, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
1. P. H. RANEY, B.A.Sc. (Killed in action, Belgium, 1917).
1. R. H. RICE, B.A.Sc.,
On Overseas Service.
7. A. S. ROBERTSON, B.A.Sc., Toronto, Ont.
With H.E.P.C.

*Degree with honours.

1914—Continued

- 4.*J. M. ROBERTSON, B.A.Sc.,
On Overseas Service.
7. H. D. ROTHWELL, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
1. F. S. RUTHERFORD, B.A.Sc., Toronto, Ont.
Dept. Soldiers' Civil Re-establishment under Major Anthes.
- 3.*J. G. SCOTT, B.A.Sc. (Died while on overseas service, 1918).
- 7.*F. M. SERVOS, B.A.Sc., Vancouver, B.C.
Tudhope Electro Metals, Ltd.
- 1.*H. L. SHEPPARD, B.A.Sc., Coldwater, Ont.
1. N. E. D. SHEPPARD, B.A.Sc., Ottawa, Ont.
Water Power Branch, Dept. of Interior.
1. S. SHUPE, B.A.Sc., Dunnville, Ont.
County Engineer.
6. A. W. SIME, B.A.Sc., 212 Heath St. W., Toronto, Ont.
- 1.*B. N. SIMPSON, B.A.Sc. Toronto, Ont.
With Hydro-Electric Power Commission
1. C. E. SINCLAIR, B.A.Sc.
On Overseas Service.
- 1.*J. B. SKAITH, B.A.Sc.,
On Overseas Service.
- 4.*W. C. SKINNER, B.A.Sc., 1022 Cass Ave., Detroit, Mich
1. H. M. SMITH, B.A.Sc. (deceased).
2. G. M. SMYTH, B.A.Sc., Merritton, Ont.
- 1.*N. L. SOMERS, B.A.Sc., Sault Ste. Marie, Ont.
Coke Plant Engr., Algoma Steel Corp.
7. R. O. STANDING, B.A.Sc.,
On Overseas Service.
- 7.*E. C. R. STONEMAN, B.A.Sc.,
On Overseas Service.
1. I. R. STROME, B.A.Sc., 555 Eleventh Street, Brandon, Man.
3. S. G. TACKABERRY, B.A.Sc., Ottawa, Ont.
Chief Mechanical Engineer, Public Works Department.
2. J. S. TAYLOR, B.A.Sc. (Killed in action, France, 1916).
- 1.*C. N. TEMES, B.A.Sc., 432 College Street, Toronto, Ont.
- 3.*E. H. TENNENT, B.A.Sc., 456 Ridout Street, London, Ont.
1. J. A. TILSTON, B.A.Sc.,
On Overseas Service.
- 1.*G. E. TRELOAR, M.A.Sc., Toronto, Ont.
- 7.*W. S. TULL, B.A.Sc., Louisburg, N.S.
Marconi Wireless Telegraph Co.
6. E. A. TWIDALE, B.A.Sc. (Killed in action, France, 1917).
- 1.*F. T. VAN DYKE, B.A.Sc., St. Catharines, Ont.
Section 1, Welland Ship Canal.
- 3.*M. F. VERITY, B.A.Sc. Brantford, Ont.
- 1.*H. O. WADDELL, B.A.Sc., Port Hope, Ont.
- 1.*H. W. WAGNER, B.A.Sc., Copper Cliff, Ont.
International Nickel Co.
- 1.*H. D. M. WALLACE, B.A.Sc. (Killed in action, 1917).
1. P. L. WHITLEY, B.A.Sc., Gorrie, Ont.
- 6.*A. E. WIGLE, B.A.Sc., Nobel, Ont.
Canadian Explosives Limited.

*Degree with honours.

1914—Continued.

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| 7.*J. A. H. WIGLE, B.A.Sc. | Kingsville, Ont. |
| 4.*A. C. WILSON, B.A.Sc.,
<i>Dept. Soldiers' Civil Re-establishment.</i> | Toronto, Ont. |
| 1. H. P. WILSON, B.A.Sc.,
<i>Canadian Inspection Co.</i> | Toronto, Ont. |
| 2.*R. W. YOUNG, B.A.Sc., | Bothwell, Ont. |

1915

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|---|--------------------------------------|
| 1. L. S. ADLARD, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. A. C. ANDERSON, B.A.Sc., | 15 Woolfrey Ave., Toronto, Ont. |
| 1.*G. A. ARKSEY, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 2. R. M. ARTHUR, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. F. D. AUSTIN, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 7. W. V. BALL, B.A.Sc., | 96A Gothic Ave., Toronto, Ont. |
| 7.*T. R. BANBURY, B.A.Sc., | Ingersoll, Ont. |
| 7. V. A. BEACOCK, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1.*P. BENNETT, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 7.*H. M. BLACK, B.A.Sc.,
<i>Shell Dept., Universal Tool Steel Co.</i> | Toronto, Ont. |
| 7. W. H. BONUS, B.A.Sc.,
<i>Asst. Superintendent, University of Toronto.</i> | Toronto, Ont. |
| 6.*J. E. BREITHAUP, B.A.Sc.,
<i>With Breithaupt Tanning Co.</i> | Kitchener, Ont. |
| 1.*E. D. G. BROUSE, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1.*L. R. BROWN, B.A.Sc.,
<i>Toronto Chemical Co.</i> | Sault Ste. Marie, Ont. |
| 1.*F. M. BUCHANAN, B.A.Sc.,
<i>With Dominion Tar and Chemical Co.</i> | Sydney, N.S. |
| 7. H. C. BUDD, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 4. H. J. BURDEN, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. F. N. D. CARMICHAEL, B.A.Sc., | 213 Cottingham St., Toronto, Ont. |
| 4.*R. W. CATTO, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. R. M. COCKBURN, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1.*J. D. COOK, B.A.Sc. (Killed in action, 1918). | |
| 1.*A. B. CREALOCK, B.A.Sc.,
<i>Willys-Overland, Ltd.</i> | Toronto, Ont. |
| 1.*W. R. DA COSTA, B.A.Sc.,
<i>On Overseas Service.</i> | |
| 1. N. H. DANIEL, B.A.Sc.,
<i>Dept. Soldiers' Civil Re-establishment.</i> | 24 Prince Arthur Ave., Toronto, Ont. |
| 3.*C. G. DAVEY, B.A.Sc.,
<i>Canadian Inspection Co.</i> | London, Ont. |
| 7.*G. P. DAVIDSON, B.A.Sc. (Killed in action, 1917). | |

*Degree with honours.

1915—Continued.

4. J. J. DAVIDSON, B.A.Sc., Humber Bay, Ont.
 7. W. A. DEAN, B.A.Sc.,
On Overseas Service.
 1.*E. V. DEVERALL, B.A.Sc.,
On Overseas Service.
 7.*J. DIBBLEE, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Comm.
 1.*W. L. DICKSON, B.A.Sc., 83 St. Clair Ave. E., Toronto, Ont.
Advertising Scales Ltd.
 1.*G. A. DOWNEY, B.A.Sc., Orillia, Ont.
 4. G. R. EDWARDS, B.A.Sc.,
On Overseas Service.
 7.*R. V. ELLIOTT, B.A.Sc.,
On Overseas Service.
 2. E. R. EMMERSON, B.A.Sc.,
On Overseas Service.
 1. A. C. EVANS, B.A.Sc., Toronto, Ont.
Instructor, Invalided Soldiers' Commission.
 1. H. S. FALCONER, B.A.Sc. (deceased).
 7. D. T. FLANNERY, B.A.Sc., Deloro, Ont.
Deloro Mining and Reduction Co.
 1. J. W. H. FORD, B.A.Sc., London, Ont.
 1.*W. R. FRASER, B.A.Sc., Allandale, Ont.
With G. T. Ry.
 1. W. G. FRENCH, B.A.Sc., 368 Markham St., Toronto, Ont.
 1.*W. J. FULTON, B.A.Sc., Toronto, Ont.
G. S. Abrey, O.L.S.
 1. R. D. GALBRAITH, B.A.Sc., Toronto, Ont.
Dept. Soldiers' Civil Re-establishment.
 1. C. N. GEALE, B.A.Sc.,
On Overseas Service.
 6. L. G. GLASS, B.A.Sc.,
On Overseas Service.
 1. G. A. GOODERHAM, B.A.Sc.,
On Overseas Service.
 7.*W. H. R. GOULD, B.A.Sc. (Killed in action, 1918).
 4.*T. S. GRAHAM, B.A.Sc.
On Overseas Service.
 1.*E. R. GRANGE, B.A.Sc.,
On Overseas Service.
 1. E. D. GRAY, B.A.Sc., Toronto, Ont.
Imperial Oil Co.
 7. G. D. GRAY, B.A.Sc., Welland, Ont.
Union Carbide Co.
 3. J. GRAY, B.A.Sc.,
On Overseas Service.
 7. G. E. GRIFFITHS, B.A.Sc.,
On Overseas Service.
 2. M. S. HAAS, B.A.Sc.,
On Overseas Service.
 2. D. S. HALFORD, B.A.Sc., Humboldt, Ariz.
Consolidated Arizona Smelting Co.
 2.*W. T. HALL, B.A.Sc. (Killed in action, France, 1917).
 2.*J. E. HANLON, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1915—Continued.

1. C. HAYWARD, B.A.Sc., Toronto, Ont.
With Kerry & Chace.
- 2.*L. T. HIGGINS, B.A.Sc., Rancagua, Chili.
Braden Copper Co.
- 1.*C. E. HOGARTH, B.A.Sc.,
On Overseas Service.
7. T. P. IRELAND, B.A.Sc., Hamilton, Ont.
Canadian Inspection Co.
- 7.*G. A. IRONSIDE, B.A.Sc.
On Overseas Service.
- 1.*C. W. H. JACKSON, B.A.Sc.,
On Overseas Service.
7. K. A. JEFFERSON, B.A.Sc., London, Ont.
Empire Mfg. Co.
- 1.*G. W. F. JOHNSTON, B.A.Sc.,
On Overseas Service.
7. C. M. JONES, B.A.Sc., Toronto, Ont.
2. R. D. JONES, B.A.Sc., 300 Spadina Rd. Hill, Toronto, Ont.
1. E. H. JUPP, B.A.Sc., Schumacher, Ont.
Engineering Staff, McIntyre Mine.
7. C. R. KEYS, B.A.Sc., Buffalo, N.Y.
Curtiss Aeroplanes and Motors Ltd.
- 5.*H. KOHL, B.A.Sc., Longford, Ont.
Standard Chemical Co.
- 1.*R. E. LAIDLAW, B.A.Sc., Toronto, Ont.
With McCarthy & McCarthy.
- 1.*G. J. LAMB, B.A.Sc., 315 St. Vincent St., Port Arthur, Ont.
Asst. City Engineer.
- 7.*G. W. LAWRENCE, B.A.Sc.,
On Overseas Service.
- 1.*H. O. LEACH, B.A.Sc. (Killed in action, France, 1918).
- 3.*R. H. LLOYD, B.A.Sc., Wingham, Ont.
1. W. E. LOCKHART, B.A.Sc. (Killed in action, France, 1917).
- 1.*W. E. LONGWORTHY, B.A.Sc., 2035 Hamilton St., Regina, Sask.
- 1.*C. T. LOUNT, B.A.Sc., Regina, Sask.
- 1.*R. G. LYE, B.A.Sc., 49 Dupont Street, Toronto, Ont.
- 1.*C. A. MACDONALD, B.A.Sc.,
On Overseas Service.
2. I. M. MACDONELL, B.A.Sc., 35 Prince Arthur Ave., Toronto, Ont.
- 1.*H. E. MACPHERSON, B.A.Sc.,
On Overseas Service.
- 1.*W. R. McCAFFREY, B.A.Sc., 45 Albermarle Ave., Toronto, Ont.
National Fire Proofing Co. of Canada, Ltd.
- 1.*C. R. McCORT, B.A.Sc., Bolton, Ont.
- 1.*J. P. McDONALD, B.A.Sc., Brantford, Ont.
McDonald's Coal Office.
- 1.*K. D. McDONALD, B.A.Sc., Toronto, Ont.
Dept. Soldiers' Civil Re-establishment.
3. *W. R. MCGIE, B.A.Sc., Walkerville, Ont.
Ford Motor Car Co.
- 1.*D. F. MCGUGAN, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1915—Continued.

7. J. S. McINTYRE, B.A.Sc.,
With H.E.P.C. Toronto, Ont.
1. E. V. McKAGUE, B.A.Sc.,
On Overseas Service.
7. E. T. MARTIN, B.A.Sc., Waddington, N.Y.
1.*W. H. MEITZ, B.A.Sc.,
Albert Albrecht Co. Detroit, Mich.
2. F. L. MILLS, B.A.Sc.
On Overseas Service.
- 1.*G. MITCHELL, B.A.Sc.
On Overseas Service.
1. J. T. MOGAN, B.A.Sc., Guelph, Ont.
Dept. Soldiers' Civil Re-establishment.
- 7.*E. M. MONTEITH B.A.Sc., Toronto, Ont.
Imperial Oil Co.
- 4.*A. MORRIS, B.A.Sc.,
On Overseas Service.
1. B. M. MORRIS, B.A.Sc. (Killed in action, France, 1917).
- 5.*W. D. MORRIS, B.A.Sc., Gretna, England
Chemical Engineer, H.M. Explosives Factory.
2. J. M. MUIR, B.A.Sc., 88 Balmoral Ave., Toronto, Ont.
- 1.*M. A. NEILSON, B.A.Sc., Toronto, Ont.
Inspector, W. H. Banfield & Sons.
- 1.*H. S. NICKLIN, B.A.Sc.,
On Overseas Service.
1. E. B. O'CONNOR, B.A.Sc., Toronto, Ont.
1. W. M. OMAND, B.A.Sc., Armco, Middleton, Ohio.
East Side Works.
- 1.*R. A. PAUL, B.A.Sc.,
On Overseas Service.
- 3.*A. N. PAYNE, B.A.Sc., Toronto, Ont.
Mechanical Engineer, Willard's Chocolates, Ltd.
1. L. P. PEARCE, B.A.Sc., Yorkton, Sask.
- 1.*H. M. PECK, B.A.Sc. (Died in France, 1918).
1. S. M. PETERKIN, B.A.Sc.,
On Overseas Service.
- 1.*C. F. PORTER, B.A.Sc., Windsor, Ont.
Canadian Steel Corporation.
- 1.*J. E. PORTER, B.A.Sc., Wingham, Ont.
2. W. D. POWELL, B.A.Sc., Sudbury, Ont.
7. W. F. P. PURDY, B.A.Sc., Wardsville, Ont.
1. W. E. RALEY, B.A.Sc. (Died of wounds received in action, 1916).
1. C. C. RANCE, B.A.Sc., Toronto, Ont.
Dept. Soldiers' Civil Re-establishment.
- 1.*G. RANKIN, B.A.Sc.,
On Overseas Service.
1. W. B. REDMAN, B.A.Sc., Birch Cliff, Ont.
- 3.*F. G. REID, B.A.Sc., Cleveland, Ohio.
Frantz Premier Co.
6. P. J. RELYEA, B.A.Sc., London, England.
Imperial Munitions Board.
- 1.*A. A. RICHARDSON, B.A.Sc.
On Overseas Service.

* Degree with honours.

1915—Continued.

- 3.*A. S. ROBERTSON, B.A.Sc.,
On Overseas Service.
1. J. T. ROSE, B.A.Sc.
On Overseas Service.
- 7.*A. C. ROSS, B.A.Sc., Cleveland, Ohio.
With Rolls-Royce Co.
2. J. ROSS, B.A.Sc., Toronto, Ont.
- 1.*H. M. ROWE, B.A.Sc.,
On Overseas Service.
4. G. W. RUTTER, B.A.Sc., Toronto, Ont.
With York Knitting Mills.
- 7.*E. W. SAVAGE, B.A.Sc., Navan, Ont.
7. A. G. SCOTT, B.A.Sc., Niagara Falls, Ont.
- 1.*E. H. SCOTT, B.A.Sc., 725 St. Clair Ave. W., Toronto, Ont.
With C.N. Ry.
- 1.*R. G. SCOTT, B.A.Sc., 33 Garnock Ave., Toronto, Ont.
Geological Survey
7. N. F. SEYMOUR, B.A.Sc., Essex, Ont.
- 1.*J. H. SHAW, B.A.Sc., Toronto, Ont.
With T. Eaton Co.
1. J. S. SHEEHY, B.A.Sc., Peterborough, Ont.
R. Sheehy & Sons.
3. W. G. SHIER, B.A.Sc. (Died of wounds received in action, 1916).
- 1.*C. N. SIMPSON, B.A.Sc., Toronto, Ont.
1. R. B. SINCLAIR, B.A.Sc. (Died of pneumonia in England while on overseas service, 1919).
3. A. H. SMYTH, B.A.Sc., Strathroy, Ont.
- 7.*W. A. STEEL, B.A.Sc.,
On Overseas Service.
2. J. B. STITT, B.A.Sc., Rancagua, Chili.
Braden Copper Co.
3. J. D. STONE, B.A.Sc., 43 Grand Ave., Chatham, Ont.
- 7.*G. C. STOREY, B.A.Sc., Wawanesa, Man.
- 2.*J. E. C. STROUD, B.A.Sc., Anyox, B.C.
With Granby Consol'd Mining and Smelting Co.
- 7.*A. N. SUHLER, B.A.Sc., Pt. Edward, Ont.
7. A. N. TAYLOR, B.A.Sc., Toronto, Ont.
Canadian Inspection Co.
1. L. B. TILLSON, B.A.Sc., Bracebridge, Ont.
1. J. A. TOM, B.A.Sc., Goderich, Ont.
- 5.*W. UFFELMANN, B.A.Sc., Montreal, Que.
Canadian Consolidated Rubber Co.
- 7.*A. L. WARD, B.A.Sc.,
On Overseas Service.
- 1.*F. E. WEIR, B.A.Sc., Burford, Ont.
- 1.*C. W. WEST, B.A.Sc.
On Overseas Service.
1. J. N. WILLIAMS, B.A.Sc.,
On Overseas Service.
- 1.*J. C. WILSON, B.A.Sc., Wingham, Ont.
- 1.*H. A. WOOD, B.A.Sc.
On Overseas Service.
7. H. K. WYMAN, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1916.

1. E. B. ALLAN, B.A.Sc., La Tuque, Que.
Engr., Logging Div., Laurentide Co. of Grand Mere
7. F. W. BALL, B.A.Sc., Toronto, Ont.
Instructor, Invalided Soldiers' Commission.
1. L. F. BARNES, B.A.Sc.,
On Overseas Service.
1. B. W. BEMROSE, B.A.Sc., Bradford, Ont.
- 5.*W. G. BIRRELL, B.A.Sc.,
On Overseas Service.
- 8.*D. BOYD, B.A.Sc., 348 Albany Ave., Toronto, Ont.
3. H. E. BREULS, B.A.Sc., Toronto, Ont.
Canadian Aeroplanes, Ltd.
- 5.*N. B. BROWN, B.A.Sc., Shawinigan, Que.
Shawinigan Electro Metals Co.
3. J. R. CHAPMAN, B.A.Sc. (killed in action, France, 1917).
- 7.*K. CUMMING, B.A.Sc., Glace Bay, N.S.
Marconi Wireless Telegraph Co.
3. J. N. CUNNINGHAM, B.A.Sc. (killed in action, France, 1917).
1. R. S. DALE, B.A.Sc., Toronto, Ont.
Paterson Mfg. Co.
- 7.*L. G. DANDENO, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
3. J. L. DELISLE, B.A.Sc., Chicoutimi, Que.
With Chicoutimi Pulp Co.
1. W. L. DOBBIN, B.A.Sc., 22 Classic Ave., Toronto, Ont.
1. J. H. EASTWOOD, B.A.Sc.,
On Overseas Service.
7. R. L. FLEGG, B.A.Sc., Montreal, Que.
1. D. B. GARDNER, B.A.Sc., 72 Tyrrel Ave., Toronto, Ont.
- 7.*E. G. GURNETT, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
- 1.*M. GUROFSKY, B.A.Sc. Box 550, Timmins, Ont.
1. G. C. HAGEDORN, B.A.Sc.,
On Overseas Service.
1. R. M. HARE, B.A.Sc., 247 Brunswick Ave., Toronto, Ont.
1. L. W. HARRON, B.A.Sc., 869 Bathurst St., Toronto, Ont.
1. C. E. HASTINGS, B.A.Sc., 252 Russell Hill Road, Toronto, Ont.
4. R. T. C. HOIDGE, B.A.Sc., 560 Dupont Street, Toronto, Ont.
7. S. HUBBERT, B.A.Sc.
On Overseas Service.
1. K. B. JACKSON, B.A.Sc.,
On Overseas Service.
- 7.*H. C. KARN, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Comm.
7. G. F. KING, B.A.Sc.,
On Overseas Service.
1. J. R. KIRBY, B.A.Sc. (Accidentally killed while on active service,
England, 1918).
1. R. W. KIRBY, B.A.Sc.,
On Overseas Service.
3. R. W. KIRN, B.A.Sc.,
On Overseas Service.
6. S. J. KRUG, B.A.Sc., Chesley, Ont.

*Degree with honours.

1916—Continued.

1. L. A. C. LEE, B.A.Sc., Parliament Bldgs., Toronto, Ont.
- 2.*B. A. McCRODAN, B.A.Sc., Miami, Ariz.
International Smelting Co.
3. R. A. MACDONALD, B.A.Sc., 220 Church St., Stratford, Ont.
- 1.*O. MARGISON, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
- 1.*W. B. MITCHELL, B.A.Sc., 150 Wharncliffe Rd., London, Ont.
- 1.*C. H. NEY, B.A.Sc.,
On Overseas Service.
3. J. C. NEWCOMBE, B.A.Sc. (Killed in action, France, 1918).
7. G. E. NOTT, B.A.Sc.,
On Overseas Service.
1. E. A. O'CALLAGHAN, B.A.Sc., Cornwall, Ont.
- 6.*C. E. OLIVER, B.A.Sc., Quyon, Que.
Canadian Wood Molybdenite Co.
1. N. L. POWELL, B.A.Sc., Delhi, Ont.
1. J. E. PRINGLE, B.A.Sc.,
On Overseas Service.
7. J. RICHMOND, B.A.Sc., Montreal, Que.
Northern Electric Co.
1. H. C. ROSE, B.A.Sc.,
On Overseas Service.
- 1.*S. R. ROSS, B.A.Sc., 175 Brunswick Ave., Toronto, Ont.
7. S. W. ROSS, B.A.Sc., Bronx, N.Y.
New York and Queens Electric Light and Power Co.
- 3.*J. P. RUSSELL, B.A.Sc., 27 Whitney Ave., Toronto, Ont.
1. W. B. SCOTT, B.A.Sc., 764 Logan Ave., Toronto, Ont.
- 1.*R. L. SEABORNE, B.A.Sc., Box 174, Quebec, Que.
Manager, Laurentian Forest Production Ass'n.
- 1.*R. L. SIEVEWRIGHT, B.A.Sc., 304 Hogarth Ave., Detroit, Mich.
4. J. L. SKINNER, B.A.Sc., 1022 Cass Ave., Detroit, Mich.
7. W. A. SMELSER, B.A.Sc.,
On Overseas Service.
7. C. A. SMITH, B.A.Sc., Timmins, Ont.
Hollinger Consolidated Gold Mines.
1. W. H. STARK, B.A.Sc., 74 Walmer Road, Toronto, Ont.
- 1.*J. A. SUREDA, B.A.Sc., Utuado, Porto Rico.
1. J. E. TREMAYNE, B.A.Sc.,
On Overseas Service.
- 5.*F. W. WARD, B.A.Sc., Toronto, Ont.
Laboratory Attendant, Dept. of Biochemistry, University of Toronto.
- 1.*R. C. WARD, B.A.Sc., Toronto, Ont.
Toronto Iron Works.
7. A. R. WELLS, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Comm.
- 7.*H. S. WEPPLER, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Comm.
7. A. E. WIDDICOMBE, B.A.Sc. (deceased).

*Degree with honours.

1917.

- 1.*H. A. BABCOCK, B.A.Sc., Chatham, Ont.
Canadian Des Moines Field Co.
4. J. BANIGAN, B.A.Sc., Toronto, Ont.
Banigan, Mathers & Thompson.
- 1.*A. E. BERRY, B.A.Sc.,
On Overseas Service.
- 1.*R. S. C. BOTHWELL, B.A.Sc., Toronto, Ont.
7. H. S. BROWN, B.A.Sc.,
On Overseas Service.
7. S. W. BUMSTEAD, B.A.Sc., St. Louis, Mo.
Century Electric Co.
- 1.*F. C. CHRISTIE, B.A.Sc.,
On Overseas Service.
7. J. C. COLLERAN, B.A.Sc., 280 Park St., Port Arthur, Ont.
 1. E. H. CORMAN, B.A.Sc., R.R. No. 5, Hamilton, Ont.
- 5.*J. V. DICKSON, B.A.Sc., Toronto, Ont.
Research Assistant, School of Engineering Research, University of Toronto.
1. J. A. FRASER, B.A.Sc.,
On Overseas Service.
7. J. I. GRAM, B.A.Sc., Weston, Ont.
1. W. K. GREATREX, B.A.Sc., Toronto, Ont.
Imperial Munitions Board.
2. G. HANMER, B.A.Sc., Ralph, Sask.
3. A. B. HARRIS, B.A.Sc., 974 Danforth Ave., Toronto, Ont.
1. R. W. HARRIS, B.A.Sc., Toronto, Ont.
C. H. & P. H. Mitchell.
5. A. J. HOLDEN, B.A.Sc., Toronto, Ont.
British Acetones Toronto, Ltd.
- 1.*R. W. HURLBURT, B.A.Sc., Central Y.M.C.A., Toronto, Ont.
7. G. F. HUTCHESON, B.A.Sc., Huntsville, Ont.
7. L. LEVESQUE, B.A.Sc. (deceased).
3. S. G. MCCANDLISH, B.A.Sc., 21 Smith Ave., Hamilton, Ont.
- 2.*H. L. MCCLELLAND, B.A.Sc., Wilberforce, Ont.
Mill Supt., Molybdenum Products Co.
3. P. E. MCILHARGEY, B.A.Sc.,
On Overseas Service.
5. G. G. MACDONALD, B.A.Sc., Sault Ste. Marie, Ont.
Imperial Ministry of Munitions.
- 1.*R. C. MANNING, B.A.Sc., 203 Hunter St. W., Hamilton, Ont.
- 4.*A. S. MATHERS, B.A.Sc., Toronto, Ont.
Banigan, Mathers & Thompson.
1. J. E. O'BRIEN, B.A.Sc.,
On Overseas Service.
- 7.*W. A. R. OFFERHAUS, B.A.Sc.,
On Overseas Service.
1. H. A. PARR, B.A.Sc., Calgary, Alta.
- 1.*R. D. RATZ, B.A.Sc., 141 Kennedy Ave., West Toronto, Ont.
Canadian Inspection & Testing Laboratory
1. E. E. SMITH, B.A.Sc.,
On Overseas Service.
7. E. W. SMITHSON, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1917—Continued.

- 3.*A. M. SNIDER, B.A.Sc.,
Can. Ingersoll Rand Co. Sherbrooke, Que.
1. R. M. SPEIRS, B.A.Sc.,
With Canadian Aeroplanes, Ltd. Toronto, Ont.
3. A. W. SWAN, B.A.Sc.,
Can. Ingersoll Rand Co. Sherbrooke, Que.
1. A. P. THOMSON, B.A.Sc.,
Demonstrator in Drawing, University of Toronto. Toronto, Ont.
- 1.*C. E. TILSTON, B.A.Sc.,
With Willys-Overland, Ltd. 156 Glenholme Ave., Toronto, Ont.
7. O. W. TITUS, B.A.Sc.,
On Overseas Service.
2. B. C. TOMLINSON, B.A.Sc., Creighton Mines, Ont.
- 1.*V. TOPPING, B.A.Sc.,
On Overseas Service.
- 7.*A. A. TUFFORD, B.A.Sc.,
On Overseas Service.
7. H. A. TUTTLE, B.A.Sc. 61 Main St., Niagara Falls, Ont.
5. E. J. TYRRELL, B.A.Sc.,
Research Chemist, T. Eaton Co. Toronto, Ont.
- 4.*H. R. WATSON, B.A.Sc.,
Architect, James, Loudon & Hertzberg, Ltd. Toronto, Ont.
1. G. WOOD, B.A.Sc.,
On Overseas Service.

1918

- 6.*C. C. ANDERSON, B.A.Sc., Windsor, Ont.
7. J. G. BALLINGER, B.A.Sc., Streetsville, Ont.
- 7.*C. K. DUFF, B.A.Sc.,
Research Assistant, School of Engineering Research, University of Toronto. Toronto, Ont.
1. F. D. ELLIS, B.A.Sc.,
Sarnia Bridge Co., Ltd. 55 Lee Ave., Toronto, Ont.
1. H. W. J. FAIRCLOUGH, B.A.Sc.,
On Overseas Service.
7. R. A. FRASER, B.A.Sc.,
Dept. Soldiers' Civil Re-establishment. Toronto, Ont.
6. C. W. HANCOCK, B.A.Sc., Box 95, Hamilton, Ont.
7. B. HYMAN, B.A.Sc., 182 Baldwin Street, Toronto, Ont.
7. E. F. JOHNSTON, B.A.Sc.,
Canadian Ingersoll Rand Co. Sherbrooke, Que.
- 1.*N. G. McDONALD, B.A.Sc., Sunderland, Ont.
- 7.*E. W. McLEOD, B.A.Sc., Embro, Ont.
2. C. E. MACDONALD, B.A.Sc.,
International Nickel Co. of Canada. Toronto, Ont.
1. C. O. MADDOCK, B.A.Sc.,
With James, Loudon & Hertzberg, Ltd. Toronto, Ont.
1. A. R. MENDIZABAL, B.A.Sc.,
Dept. Soldiers' Civil Re-establishment. Guelph, Ont.
1. R. C. MITCHELL, B.A.Sc.,
On Overseas Service.
- 7.*W. H. ORR, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1918—*Continued.*

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|---|--|
| 1. G. P. PEARSON, B.A.Sc., | Schomberg, Ont. |
| 1.*J. ROVSKY, B.A.Sc., | 121 Maria Street, Toronto |
| 1. W. L. SAGAR, B.A.Sc., | |
| <i>On Overseas Service.</i> | |
| 1.*M. SAMUEL, B.A.Sc., | 7 Bellevue Place, Toronto, Ont. |
| 1.*C. R. SCOTT, B.A.Sc., | Toronto, Ont. |
| <i>With James, Loudon & Hertzberg, Ltd.</i> | |
| 2. J. G. SHEPLEY, B.A.Sc., | (Died while on active service, England, 1918). |
| 7.*W. G. WOONTON, B.A.Sc., | |
| <i>On Overseas Service.</i> | |

*Degree with honours.

CERTIFICATES.

MINERALOGY AND ASSAYING.

1896. G. JOHNSTON.
 1897. E. B. WEBSTER.
 1901. G. A. HUNT.

ELECTRICITY.

1896. A. T. TYE, c/o Empresa Hanseatica, Barranquilla, Columbia, South America.
 1898. A. N. McMILLAN, Penetanguishene, Ont.
 1900. A. H. SMITH.
 1896. E. I. SIFTON, London, Ont.
 Manager, London Electric Construction Co.
 1903. W. ELWELL (deceased).

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A

Abendana, E. M. (deceased)...	1914	Anderson, R. M.....	1908
Acres, H. G.....	1903	Anderson, A. S. (deceased)....	1913
Adams, J. H.....	1910	Andrews, E.....	1897
Adams, O. F.....	1910	Andrews, F. C. (deceased)....	1914
Adlard, L. S.....	1915	Angus, H. H.....	1903
Adsett, F. C.....	1914	Angus, R. W.....	1894
Agnew, N. J.....	1910	Apsey, J. F.....	1888
Aitken, J.	1911	Archer, E. G.....	1911
Akers, H. G. (deceased).....	1908	Ardagh, A. G.....	1893
Alexander, J. H.....	1904	Ardagh, E. G. R.....	1900
Alison, T. H.....	1892	Arens, A. H.....	1906
Alison, J. G. R.....	1903	Arens, H. W. (deceased).	1905
Allan, E. B.....	1916	Arens, R. J.....	1908
Allan, J. R.....	1892	Arens, E. G.....	1909
Allan, J. L.....	1900	Arksey, G. A.....	1915
Allan, L. F.....	1908	Armer, C. E.....	1914
Allan, L. B.....	1911	Armer, J. C.....	1906
Allen, F. G.....	1907	Armour, R. H.....	1905
Allen, R. J.....	1913	Armstrong, J.....	1895
Allison, C. B.....	1908	Armstrong, H. V.....	1906
Alport, F.....	1906	Arthur, R. M.....	1915
Alton, J. L.....	1914	Ashbridge, W. T.....	1888
Amos, W. L.....	1906	Augustine, A. P.....	1907
Amsden, W. G. (deceased)....	1910	Austin, E. T.....	1909
Anderson, A. C.....	1915	Austin, F. D.....	1915
Anderson, A. G.....	1892	Avery, C. R.....	1913
Anderson, C. C.....	1918	Aylesworth, C. B.....	1905
Anderson, F. J. (deceased)....	1907		

B

Babcock, H. A.....	1917	Barber, H. C.....	1908
Badgley, L. A.....	1911	Barber, H. G.....	1902
Bain, J. A. (deceased).....	1900	Barber, T.....	1899
Bain, J. W.....	1896	Barber, W.....	1905
Baird, J. A.....	1910	Barker, H. F... ..	1894
Baird, W. J.....	1910	Barley, J. H.....	1900
Baker, M. H.....	1906	Barnes, L. F.....	1916
Baldwin, F. W.....	1906	Barnett, H. A.....	1910
Baldwin, L. C. M.....	1913	Barrett, R. H. (deceased).	1901
Ball, E. F.....	1888	Barrett, J. H.	1904
Ball, F. W.....	1916	Barry, W. H.....	1909
Ball, W. V.....	1915	Bartlett, E.....	1908
Ballantyne, H. F.....	1893	Bartley, T. H.....	1911
Ballinger, J. G.....	1918	Bates, M. (deceased).	1906
Banbury, T. R.....	1915	Batten, H. L.....	1911
Banigan, J.....	1917	Beacock, V. A.....	1915
Banks, H. R.....	1914	Beatty, F. W.....	1913
Banting, E. W.....	1906	Beatty, W. B.	1913
Barber, F.....	1906	Beatty, H. J.....	1891

Beatty, W. G.	1901	Bow, J. A.	1897
Beatty, J. A.	1903	Bowen, G. H.	1909
Beauregard, A. T.	1894	Bower, J. H. W.	1914
Beckstedt, R.D.S.	1909	Bowers, W. J. (deceased)....	1901
Bedard, E. L.	1914	Bowes, H. F.	1908
Bedard, H. J.	1914	Bowman, A. M.	1886
Bedford, F. J. (deceased)	1908	Bowman, E. P.	1910
Begg, W. A.	1905	Bowman, F.	1911
Beith, R. E.	1909	Bowman, F. M.	1890
Belcher, J. T.	1914	Bowman, H. D.	1907
Bell, C. A.	1913	Bowman, H. J.	1885
Bell, G. G.	1905-1908	Boyd, D.	1916
Bell, R. S.	1913	Boyd, D. G.	1894
Bellisle, J. P. (deceased).	1906	Boyd, W. H.	1898
Bemrose, B. W.	1916	Brace, J. H.	1908
Bennett, G. A.	1909	Brackinreid, T. W.	1911
Bennett, P.	1915	Brady, W. S.	1907
Bennett, S. G.	1914	Brandon, E. T. J.	1901
Bergey, A. E.	1894	Brandon, H. E.	1906
Berkeley, G. L.	1911	Bray, L. T.	1900
Berry, A. E.	1917	Brebner, G. (deceased)....	1895
Berry, E. W.	1910	Brecken, P. R.	1908
Bertram, G. M.	1910	Breithaupt, J. E.	1915
Betts, H. H.	1906	Brereton, L. R.	1913
Beynon, D. E.	1906	Brereton, W. P.	1901
Billings, J. H.	1911	Breslove, J.	1903
Bingham, H. C.	1910	Breuls, H. E.	1916
Binns, P. V. (deceased)	1914	Brian, M. E.	1906
Binns, R. E.	1913	Bristol, W. M.	1905
Birchard, E. R.	1909	Broadfoot, F. C.	1906
Birrell, W. G.	1916	Brock, A. F.	1910
Bissett, D. G.	1910	Brock, W. M.	1911
Bissett, G. W.	1906	Brodie, W. M.	1895
Bissett, J. R.	1911	Broughton, G. H.	1907
Black, B. S.	1913	Broughton, J. T.	1902
Black, G. E.	1908	Brouse, E. D. G.	1915
Black, H. M.	1915	Brouse, W. H. D.	1911
Black, W. D.	1909	Brown, B.	1913
Blackwell, R. H. H.	1910	Brown, C. E.	1909
Blackwood, A. E.	1895	Brown, D. B.	1888
Blackwood, W. C.	1906	Brown, E. I.	1908
Blain, D.	1913	Brown, G. L.	1893
Blair, W. J.	1902	Brown, H. O.	1911
Bleakley, J. F.	1885	Brown, H. H.	1914
Blizard, D. C.	1909	Brown, H. S.	1917
Blyth, J. M.	1914	Brown, J. A.	1907
Boeckh, J. C.	1906	Brown, J. M.	1902
Bonham, A. R.	1914	Brown, L. L.	1895
Bonnell, M. B.	1904	Brown, L. R.	1915
Bonter, E. R.	1913	Brown, N. B.	1916
Bonus, W. H.	1915	Brown, T. D.	1904
Boswell, E. J.	1895	Brown, T. W.	1906
Boswell, M. C.	1900	Brown, W. D.	1914
Boswell, W. O. (deceased)....	1911	Browne, E. W.	1909
Bothwell, R. S. C.	1917	Browne, M. O.	1910
Boulton, W. J.	1909	Bruce, W. J.	1907
Bourne, O. B.	1907	Bryce, W. F. M.	1908
Boustead, W. E. (deceased)...	1890	Buchan, P. H.	1908

Buchanan, F. M.....	1915	Burley, R. J.....	1904
Buchanan, J. A.....	1909	Burns, D. (deceased)	1883
Buchanan, T. R.....	1913	Burns, J. C. (deceased).....	1887
Buchanan, W. B.....	1913	Burns, J. E.....	1909
Bucke, M. A. (deceased).....	1890	Burnham, F. W.....	1904
Bucke, W. A.....	1894	Burnham, N. G. H. (deceased)	1910
Budd, H. C.....	1915	Burnside, J. T. M. (deceased)	1899
Bumstead, S. W.....	1917	Burrows, B. H. A. (deceased)	1913
Bunnell, A. E. K.....	1906	Burwash, L. T.....	1896
Burd, J. H.....	1903	Burwash, N. A.....	1903
Burden, H. J.....	1915	Bush, C. E.....	1907
Burgess, E. L.....	1903	Byam, F. M.....	1906
Burgess, J. R.....	1910		

C

Cain, E. T.....	1911	Catto, R. W.....	1915
Calder, J. W.....	1904	Caudwell, N. S.....	1910
Caldwell, W. B.....	1913	Cavell, E.....	1907
Cale, W. C.....	1910	Chace, W. G.....	1901
Cameron, N. C.....	1904	Chadwick, R. E. C.	1906
Cameron, A.....	1906	Chadwick, W. W.....	1911
Cameron, M. G.....	1909	Challen, G.	1908
Cameron, C. S.....	1911	Challies, J. B.....	1904
Cameron, O. L. (deceased) ..	1913	Chalmers, W. J.....	1889
Campbell, A. D.....	1910	Chalmers, J.....	1894
Campbell, A. J.....	1904	Chambers, E. V.....	1914
Campbell, A. M.....	1904	Chandler, R. B.....	1911
Campbell, D. H.....	1914	Chapman, J. R. (deceased) ..	1916
Campbell, H. M.....	1914	Charlesworth, L. C.....	1893
Campbell, J. J. (deceased) ..	1914	Charlton, H. W.....	1897
Campbell, W. G.....	1902	Chase, A. V.....	1905
Campbell, A. R. (deceased) ..	1902	Cherry, P. G.....	1911
Campbell, R. J.....	1895	Chesnut, A. W. (deceased) ..	1910
Campbell, G. M.....	1896	Chesnut, E. F.....	1911
Campbell, L. L.....	1913	Chesnut, F. H.....	1908
Campbell, W. C.....	1905	Chesnut, V. S.....	1909
Campbell, N. A.....	1908	Chewett, H. J.....	1888
Campbell, R. A.....	1909	Chilver, C. A.....	1904
Campbell, A. W.....	1906	Chilver, H. L.....	1904
Campbell, J. E.....	1908	Chisholm, D. C.....	1910
Campbell, C. D.....	1911	Christie, F. C.....	1917
Candee, C. N.....	1914	Christie, W.....	1902
Canniff, C. M.....	1888	Christie, U. W.....	1904
Carey, B.....	1889	Christie, A. G.....	1901
Carlyle, R. T.....	1914	Christie, R. M.....	1914
Carlyle, W. M. (deceased) ..	1910	Chubbuck, L. B.....	1899
Carmichael, C. G. (deceased) ..	1902	Clark, H.....	1913
Carmichael, F. N. D.....	1915	Clark, J.....	1900
Carmichael, R. M.....	1913	Clark, G. T.....	1906
Carpenter, H. S.....	1897	Clark, F. W.....	1911
Carrie, G. M.....	1913	Clark, H. J.....	1911
Carroll, A. M.....	1908	Clarke, F. F.....	1903
Carroll, M. J.....	1906	Clarkson, G. E.....	1913
Carscallen, H. R.....	1908	Claveau, J. A.	1910
Carson, W. R.....	1905	Cleary, F. S. (deceased)	1911
Carter, J. M.....	1914	Clegg, B. D.....	1913
Carter, W. E. H.....	1898	Clement, W. A.....	1889
Caster, J. H.....	1907	Clement, S. R. A.....	1905

Cline, C. G.	1909	Corrigan, G. D. (deceased)....	1890
Clipsham, K. M.	1914	Corrigan, T. E.	1905
Clothier, G. A.	1899	Cory, R. Y.	1908
Coates, P. C.	1904	Coulson, C. L.	1903
Cockburn, J. R.	1901	Courtice, E. D. W.	1914
Cockburn, L. S.	1910	Cousins, E. L.	1906
Cockburn, R. M.	1915	Coulthard, R. W.	1899
Code, A. G.	1910	Cowan, W. A.	1904
Code, S. B.	1904	Cowper, G. C.	1907
Code, T. F. (deceased)....	1904	Coyne, H.	1908
Cole, D. B.	1911	Craig, J. A.	1899
Cole, W. E. (deceased)....	1908	Craig, J. H.	1910
Cole, C. R.	1910	Craig, S. E.	1904
Coleman, J. H.	1913	Crashley, J. W.	1914
Colhoun, G. A.	1906	Crawford, A. W.	1914
Colleran, J. C.	1917	Crealock, A. B.	1915
Collett, W. C.	1908	Creighton, A. G.	1906
Collinson, J. G.	1909	Crerar, S. R.	1904
Colquhoun, G. A.	1910	Crosby, N. L. R.	1905
Coltham, G. W.	1909	Crosby, T. H.	1909
Conlon, F. T. (deceased)....	1902	Crouch, M. E.	1911
Connell, C. B. B.	1907	Cruthers, W. M.	1911
Connor, H. V.	1902	Culbert, M. T. (deceased)....	1902
Connor, A. W.	1895	Culbert, J. V.	1907
Cooch, H. A.	1909	Cumming, J. D.	1908
Cook, A. S.	1911	Cumming, R.	1916
Cook, G. M.	1913	Cumming, K.	1902
Cook, J. D. (deceased)....	1915	Cummins, O. F.	1911
Cook, W. A. Mc.	1906	Cunerty, T. J.	1911
Coombs, J. A.	1913	Cunningham, C. H.	1911
Coon, B. R.	1913	Cunningham, J. N. (deceased)1916	
Cooper, C.	1899	Cunningham, R. H.	1909
Corbould, C. E. B.	1914	Currie, W. M.	1904
Corman, E. H.	1917	Curtis, W. T.	1913
Corman, W. E.	1909	Curzon, J. H.	1911
Cornell, C. W.	1911	Cuthbertson, W.	1914

D

Da Costa, W. R.	1915	Davidson, J. J.	1915
Dahl, A. D.	1908	Davis, R.	1907
Dale, R. S.	1916	Davis, A. I.	1909
Dallyn, F. A.	1909	Davis, H. W.	1909
D'Alton, F. K.	1911	Davis, H. C.	1909
Dalton, G. F.	1914	Davis, W. B.	1911
Dandeno, L. G.	1916	Davison, J. E.	1900
Daniel, N. H.	1915	Davison, A. E.	1903
Daniels, W. N.	1906	Dawson, I. H. (deceased)....	1909
Danks, F. A.	1908	Deacon, T. R.	1891
Danks, C. N.	1909	Dean, C. D.	1910
Dann, E. M. (deceased)....	1909	Dean, W. A.	1915
Darling, E. H.	1898	Death, N. P. F.	1909
Darroch, J.	1908	DeCew, J. A.	1896
Dashwood, R.	1914	De Guerre, F. C. (deceased) ..	1911
Dates, A. J.	1913	Deitch, E. L.	1913
Davey, C. G.	1915	Delahaye, W. H.	1909
Davidson, R. D.	1914	Delamere, R. D.	1914
Davidson, G. P. (deceased)...	1915	De Laporte, A. V.	1910

Delisle, J. L.	1916	Doorly, H. C. (deceased)	1908
Depew, H. H.	1904	Douglas, F. W.	1914
Derham, W. P.	1909	Douglas, R. H.	1908, 1909
Deverall, E. V.	1915	Douglas, W. E.	1902
Diamond, R. W.	1913	Downey, G. A.	1915
Dibblee, J.	1915	Downing, F. H.	1911
Dickinson, E. D.	1900	Duff, A. R.	1909
Dickson, G. W.	1900	Duff, C. K.	1918
Dickson, J. V.	1917	Duff, J. A. (deceased)	1890
Dickson, W. L.	1915	Duff, W. A.	1901
Dill, C. W.	1891	Duggan, G. H.	1883
Dixon, H. A.	1900	Dunbar, W. B.	1911
Dobbin, R. L.	1910	Duncan, J. M.	1910
Dobbin, W. L.	1916	Duncan, W. G.	1913
Dobie, J. S.	1895	Dundass, C. S.	1906
Dobson, W. P.	1910	Dunlop, R. J.	1902
Dodds, W. A.	1909	Dunn, T. H.	1893
Doncaster, L. W.	1911	Dyer, F. C.	1908

E

Eagleson, F. M.	1908	Elliott, J. C.	1899
Eason, D. E.	1901	Ellis, F. D.	1918
Eastwood, J. H.	1916	Ellis, S. D. (deceased)	1914
Eckert, C. H.	1911	Elwell, W. (deceased)	1902
Edwards, W. M.	1902	Emery, V. H.	1910
Edwards, C.	1908	Emmerson, E. R.	1915
Edwards, G. R.	1915	Empey, J. M.	1902
Edwards, H. C.	1914	English, A. B. (deceased)	1890
Elder, A. J.	1904	Evans, A. C.	1915
Elliot, J. A.	1911	Evans, S. D.	1907
Elliot, R. V.	1915	Evans, S. L.	1908
Elliott, J. A.	1914	Evans, W. J.	1910
Elliott, G. R.	1911	Ewart, J. A.	1894
Elliott, C. F.	1911	Ewart, F. R.	1907
Elliott, H. F.	1914	Ewing, E. O.	1908
Elliott, H. P.	1896	Eyres, H. E.	1914

F

Fairbairn, J. M. R.	1893	Fisken, J. B. K.	1910
Fairchild, C.	1892	Flanagan, O. L.	1908
Fairclough, H. W. J.	1918	Flannery, D. T.	1915
Fairlie, H. W.	1910	Fleck, J. G.	1904
Falconer, F. S.	1909	Flegg, R. L.	1916
Falconer, H. S. (deceased)	1915	Fleming, D. H.	1913
Falls, O. M.	1914	Fleming, G. O.	1914
Fargey, T. A.	1909	Fleming, G. R. S. (deceased) ...	1907
Farrell, K. A.	1911	Fleming, J. S. (deceased)	1914
Farrelly, T. J.	1911	Fletcher, A. W.	1910
Fear, S. L.	1906	Fletcher, F. T.	1910
Fensom, C. J.	1903	Fletcher, J. A.	1910
Ferguson, C. R.	1910	Flint, C.	1908
Ferguson, D. G.	1914	Flint, T. R. C.	1910
Ferguson, G. H.	1905	Flook, S. E.	1911
Ferguson, J. B.	1909	Flynn, C. C.	1911
Ferguson, J. W.	1910	Follett, R. C.	1910
Fergusson, A. T.	1909	Foote, F. F.	1913
Fierheller, H. S. (deceased)	1905	Forbes, D. L. H.	1902
Fingland, W.	1893	Ford, A. L.	1904
Fiddes, F. R.	1913	Ford, J. W. H.	1915

Foreman, J. L.....	1914	Fraser, W. R.....	1915
Foreman, J. M.....	1910	Fredin, J.....	1910
Forman, W. E.....	1899	Freeland, E. E.....	1911
Forrester, C.....	1893	Freeman, T. E.....	1909
Forward, E. A.....	1897	Freeman, J. R.....	1911
Forward, C. C.....	1906	French, W. G.....	1915
Foster, A. H.....	1908	Frid, H. P.....	1911-1915
Foster, W. J.....	1910	Frost, E. R.....	1909
Foulds, W. C.....	1910	Frost, J. G. G.....	1914
Francis, Walter J.....	1893	Fuce, E. O.....	1903
Francis, G. C.....	1908	Fuller, C. H. R.....	1914
Frankel, E. L.....	1911	Fuller, R. J.....	1911
Franklin, H. J.....	1914	Fullerton, C. H.....	1900
Fraser, A. (deceased).....	1910	Fulton, W. J.....	1915
Fraser, J. A.....	1917	Fux, P. C.....	1907
Fraser, R. A.....	1918		

G

Gaby, F. A.....	1903	Gourlay, W. A.....	1903
Gagne, S. (deceased).....	1901	Graham, C. W.....	1906
Galbraith, J. S.....	1913	Graham, E. B.....	1910
Galbraith, R. D.....	1915	Graham, G. W.....	1907
Gall, H.....	1910	Graham, D. A.....	1909
Galletly, J. S.....	1907	Graham, T. S.....	1915
Galt, G. (deceased).....	1907	Gram, J. I.....	1917
Gardner, D. B.....	1916	Grange, E. R.....	1915
Gardner, J. C.....	1903	Grant, W. F. (deceased).....	1898
Garland, M. L.....	1890	Grant, R. R.....	1909
Garrow, A. B.....	1907	Grasett, C. S.....	1907
Geale, C. N.....	1915	Grassie, C. A.....	1908
Gear, S. S.....	1908	Gray, A.....	1904
George, R. E.....	1903	Gray, A. G.....	1913
Gibbons, J.....	1888	Gray, A. T.....	1897
Gibson, A. E.....	1902	Gray, A. J.....	1913
Gibson, J. M.....	1910	Gray, E. D.....	1915
Gibson, M. M.....	1910	Gray, E. R.....	1913
Gibson, N. R.....	1901	Gray, G. D.....	1915
Gibson, W. S.....	1904	Gray, J.....	1906
Gill, E. I.....	1914	Gray, J.....	1915
Gill, J. R.....	1914	Gray, J. E.....	1909
Gillespie, P.....	1903	Gray, W. W.....	1904
Gillies, A.....	1907	Greatrex, W. K.....	1917
Glass, L. G.....	1915	Green, R. E.....	1911
Glover, A. E.....	1909	Greene, E. A.....	1911
Goad, V. A. E.....	1910	Greene, G. E. D.....	1909
Goldie, A. R.....	1893	Greene, P. W.....	1906
Goodall, J. N.....	1904	Greene, R. L.....	1910
Gooderham, A. E.....	1909	Greene, W. H.....	1909
Gooderham, G. A.....	1915	Greenwood, W. K.....	1904
Gooderham, J. L.....	1911	Grierson, C. I.....	1914
Goodeve, V. S.....	1910	Griffiths, G. E.....	1915
Goodman, H. M.....	1913	Guernsey, F. W.....	1895
Goodwin, A. C.....	1902	Gulley, C. L.....	1908
Goodwin, J. B.....	1892	Gunn, W. W.....	1909
Gordon, J. P.....	1904	Gurnett, E. G.....	1916
Gordon, W. A.....	1910	Gurney, W. C.....	1896
Gouinlock, R. W.....	1914	Gurofsky, M.....	1916
Gould, W. H. R. (deceased)...	1915	Guest, W. S.....	1900
Gourlay, V. F.....	1910	Guy, E.....	1899

H

Haas, M. S.	1915	Hayward, C.	1915
Hackner, J. W.	1908	Hearn, R. L.	1913
Hadcock, J. P.	1913	Heebner, M. B.	1911
Hagarty, R. E. W.	1907	Heinonen, H. J.	1913
Hagedorn, G. C.	1916	Helliwell, J. G. (deceased)	1910
Hagerman, F. G.	1909	Helson, F. I.	1901
Haight, H. V.	1896	Hemphill, W.	1900
Halford, D. S.	1915	Hemphill, J.	1909
Hall, H. G.	1911	Henderson, E. E.	1885
Hall, K.	1907	Henderson, F. D.	1903
Hall, W. H.	1914	Henderson, J. F.	1910
Hall, W. T. (deceased)	1915	Henderson, S. E. M.	1900
Hally, G. H.	1914	Henderson, C. D.	1908
Hamer, A. T. E.	1901	Hendry, M. C.	1905
Hamilton, J. F.	1903	Henry, J. A.	1900
Hamilton, C. B.	1906	Henry, R. A.	1913
Hamilton, C. T.	1907	Henwood, C.	1902
Hamilton, G. M.	1911	Herald, W. J.	1894
Hancock, C. W.	1918	Hermon, E. B.	1886
Hanes, G. S.	1903	Heron, J. B.	1904
Hanley, S. C.	1893	Hertzberg, C. S. L.	1905
Hanlon, J. E.	1915	Hertzberg, H. F. H.	1907
Hanmer, G.	1917	Hett, S.	1906
Hanna, J. J.	1914	Hewson, E. G.	1908
Hanning, G. F.	1889	Hewson, W. G.	1905
Hara, L. D.	1904	Hickling, F. G.	1910
Harcourt, F. Y.	1903	Hicks, W. A. B.	1897
Harcourt, H. E.	1911	Higgins, L. T.	1915
Hare, R. A.	1907	Hill, E. M. M.	1904
Hare, R. M.	1916	Hill, S. N.	1904
Hare, W. A.	1899	Hill, H. O.	1907
Harkness, A. H.	1895	Hill, H. R.	1911
Harkness, A. L.	1906	Hill, T. A.	1913
Harper, C. J.	1909	Hillis, C. R. (deceased)	1906
Harris, A. B.	1917	Hinch, E. F.	1910
Harris, C. J.	1904	Hogarth, B. B.	1914
Harris, J. H.	1910	Hogarth, C. E.	1915
Harris, H. C.	1913	Hogarth, G.	1909
Harris, R. W.	1917	Hogg, T. H.	1907
Harrison, R. L.	1906	Hoidge, R. T. C.	1916
Harrison, F. W.	1905	Holcroft, H. S. (deceased)	1900
Harrison, E.	1906	Holden, A. J.	1917
Harron, L. W.	1916	Holden, O.	1913
Hartney, J. C. (deceased)	1906	Holmes, A. E.	1909
Harvey, C.	1901	Holmes, C. R.	1909
Harvey, D. W.	1909	Hookway, C. W.	1906
Harvie, N. J. (deceased)	1910	Hoover, O. H.	1910
Hastings, C. E.	1916	Hopkins, P. E.	1910
Hastings, M. B.	1911	Hopkins, R. H.	1906
Haultain, H. E. T.	1889	Horton, J. A.	1903
Haviland, F. L.	1908	Hoshal, G. C.	1909
Hawes, J. H.	1914	Houston, R. S.	1906
Hawley, H. A.	1913	Howard, J. T. (deceased)	1913
Hay, C. O. (deceased)	1909	Howlett, T. F.	1913
Hayes, L. J.	1903	Hubbert, S.	1916
Hayman, L. T.	1914	Huber, W.	1906

Huether, D. J.....	1908	Hurlburt, R. W.....	1917
Huether, A. D.....	1908	Hustwitt, S. A.....	1914
Huff, A. J.....	1911	Hutcheon, J.....	1890
Huffman, K.....	1911	Hutcheson, G. F.....	1917
Hughes, C. (deceased).....	1909	Hutchings, W.....	1914
Hugli, E. E. H.....	1914	Hutton, C. H.....	1907
Hull, H. S.....	1895	Hyatt, H.....	1911
Hull, A. H.....	1906	Hyland, H. M.....	1907
Hunter, A. E. (deceased).....	1909	Hyman, B.....	1918
Hunter, A. N.....	1908	Hyman, E. W.....	1907

I

Iler, S. B.....	1908	Ironside, G. A.....	1915
Ingles, C. J.....	1904	Irvine, J. (deceased).....	1889
Innes, W. L.....	1890	Irwin, H.....	1909
Ireland, L. G.....	1907	Irwin, W. J.....	1910
Ireland, T. P.....	1915	Isbister, J.....	1909
Ireson, E. T.....	1913		

J

Jackes, F. P.....	1909	Johnston, E. F.....	1918
Jackson, C. W. H.....	1915	Johnston, G. W. F.....	1915
Jackson, J. G.....	1903	Johnston, H.....	1903
Jackson, F. C.....	1901	Johnston, H. C.....	1910
Jackson, W.....	1907	Johnston, A. C.....	1894
Jackson, C. B.....	1907	Johnston, D. M.....	1902
Jackson, J. E.....	1909	Johnston, H. A.....	1900
Jackson, K. B.....	1916	Johnston, J. C.....	1900
James, E. W.....	1909	Johnston, J. A.....	1900
James, D. D.....	1889	Johnston, C. K.....	1903
James, E. A.....	1904	Johnston, R. H.....	1910
James, F. L.....	1910	Johnston, W. J.....	1909
James, O. S.....	1891	Johnston, C.....	1906
Jamieson, E. A.....	1910	Johnston, C. E. (deceased).....	1909
Jannati, A. S.....	1914	Johnston, J. T.....	1908
Jarvis, R. H. (deceased).....	1911	Jones, C. M.....	1915
Jefferson, K. A.....	1915	Jones, J. E.....	1894
Jeffrey, D.....	1882	Jones, L. E.....	1911
Jepson, W. C.....	1906	Jones, G. S.....	1905
Jermyn, P. V.....	1904	Jones, G. R.....	1906
Job, H. E.....	1894	Jones, R. D.....	1915
Johnson, C. C.....	1890	Jones, T. (deceased).....	1906
Johnson, R. P.....	1914	Jupp, A. E.....	1906
Johnson, S. M.....	1894	Jupp, E. H.....	1915
Johnson, G. R.....	1913	Junkin, R. L.....	1913

K

Kamman, J. I.....	1914	Keith, H. P.....	1907
Karn, H. C.....	1916	Kelly, E. A.....	1911
Kay, J. (deceased).....	1914	Kelly, S. S.....	1913
Kay, E. W.....	1907	Kemp, J. B. O.....	1909
Keefe, W. S. H.....	1904	Kennedy, J. H.....	1882
Keefer, N. G.....	1914	Kennedy, H. G.....	1908
Keele, J.....	1893	Keppy, J. D. (deceased).....	1906
Keffer, A. H. E.....	1909	Kerby, H. S.....	1914
Keith, J. C.....	1910	Kerr, A. E.....	1913
Keith, D. F.....	1907	Kerr, J. A.....	1914

Kewin, G. E.....	1914	Kirkwood, M.....	1911
Key, W. R.....	1909	Kirn, R. W.....	1916
Keys, C. R.....	1915	Kirwan, G. L.....	1910
Keys, W. R.....	1908	Kirwan, P. T.....	1910
Killip, W. C.....	1908	Klingner, L. W.....	1907
Kilmer, C. E.....	1913	Klotz, H. N. (deceased).....	1909
King, C. F.....	1897	Knight, R. H.....	1902
King, G. F.....	1916	Knight, J. A.....	1914
King, J. T.....	1910	Knight, S.....	1910
Kinghorn, A. A.....	1907	Kohl, H.....	1915
Kingstone, G. A.....	1910	Kormann, J. S.....	1898
Kirby, J. R. (deceased).....	1916	Kribs, G.....	1905
Kirby, R. W.....	1916	Krug, S. J.....	1916
Kirkland, W. C. (deceased)...	1884		

L

Laidlaw, J. T.....	1893	Lee, L. A. C.....	1916
Laidlaw, R. A.....	1901	Lee, R. G.....	1910
Laidlaw, R. E.....	1915	Lee, W. A. (deceased).....	1892
Laing, W. F. (deceased).....	1896	Leighton, J. W.....	1905
Laing, A. T.....	1892	Leitch, J. N. (deceased).....	1910
Laing, J. S.....	1913	Lennox, A. E.....	1909
Laing, P. A.....	1905	LePan, A. D.....	1907
Laird, R.....	1886	Leslie, A.....	1913
Lamb, F. C.....	1907	Leslie, J. N. M.....	1908
Lamb, G. J.....	1915	Lethbridge, W. R.....	1911
Lamont, A. W.....	1909	Levesque, L. (deceased).....	1917
Lancaster, H. M.....	1906	Lewis, F. C.....	1908
Lane, A. (deceased).....	1891	Lieberman, M.....	1911
Lang, A. G.....	1903	Lillie, G. L.....	1911
Lang, J. L.....	1906	Lindsay, J. H.....	1907
Lang, S. A. (deceased).....	1914	Lindsay, R. E.....	1914
Langley, C. E.....	1892	Linton, A. P.....	1906
Langmuir, F. L.....	1902	Livingston, H. D. (deceased) ..	1913
Langmuir, C. B.....	1909	Lloyd, N. C. A.....	1909
Lanning, J.....	1911	Lloyd, R. H.....	1915
Larkworthy, W. J. (deceased).	1904	Lockhart, W. E. (deceased)...	1915
Laschinger, E. J.....	1892	Long, A. L.....	1911
Lash, F. L.....	1893	Longstaff, J. C.....	1910
Lash, N. M.....	1894	Longworthy, W. E.....	1915
Latham, R.....	1899	Lorimer, N. H.....	1914
Latimer, C. W.....	1914	Lott, A. E.....	1887
Latornell, A. J. (deceased)...	1903	Loucks, R. W. E.....	1909
Latornell, A.....	1905	Loudon, T. R.....	1905
Lavrock, J. E.....	1898	Lount, C. T.....	1915
Lawler, E. R.....	1910	Lowrie, A. W. P.....	1911
Lawless, N. (deceased).....	1911	Ludgate, B. A.....	1885
Lawrence, G. W.....	1915	Lumbers, W. C.....	1901
Lawson, W. L.....	1892	Lye, O. G.....	1914
Lawrie, R. R. (deceased)	1896	Lye, R. G.....	1915
Leach, H. O. (deceased).....	1915	Lynar, H. R.....	1908
Leaver, C. B.....	1910		

Mac

Macallum, A. F.....	1893	MacBeth, C. (deceased).....	1896
MacAndrews, W. M.....	1911	MacBeth, R. E. A. (deceased)..	1911
Macaulay, R. V.....	1911	Macdonald, A. D.....	1910
MacBain, J. T.....	1911	Macdonald, C. A.....	1915

Macdonald, C. E.....	1918	Mackinnon, J. A.....	1911
Macdonald, G. G.....	1917	Mackinnon, J. G.....	1909
Macdonald, J. B.....	1910	Mackinnon, W.....	1906
Macdonald, J. A.....	1910	Mackintosh, D.....	1898
Macdonald, G. A.....	1910	MacIachlan, K. S.....	1913
Macdonald, F. M.....	1911	MacIachlan, W.....	1906
Macdonald, R. A.....	1916	MacLachlan, W. A.....	1909
Macdonald, W. A. (deceased) ..	1914	MacLaurin, J. G.....	1911
Macdonell, I. M.....	1915	Maclean, B. A.....	1909
Macdougall, A. C.....	1901	MacLennan, G. G. (deceased) ..	1910
Macfarlane, E. D.....	1909	MacLeod, G.....	1907
MacGregor, A. E.....	1910	MacLeod, D. D. (deceased) ..	1910
MacKay, A. G.....	1907	MacMillan, G.....	1901
MacKay, J. T.....	1902	MacMurchy, J. A.....	1896
MacKay, E. G.....	1910	MacMurchy, H. G.....	1910
MacKendrick, B.....	1914	Macpherson, H. E.....	1915
MacKenzie, H. R.....	1913	Macpherson, N. W.....	1909
MacKenzie, K. A.....	1906	MacPherson, A. R.....	1913
MacKenzie, H. J.....	1914	Macpherson, H. N.....	1914
Mackenzie, A. M.....	1914	MacQuarrie, A. H.....	1914
Mackenzie, W. D.....	1907	MacTavish, H. J.....	1910
MacKenzie, W. S.....	1911	MacTavish, W. H.....	1913

Mc

McAllister, J. E.....	1891	McEntee, B.....	1892
McAllister, A. L.....	1893	McEwen, G. G.....	1904
McAlpine, D. D.....	1909	McEwen, H. J.....	1911
McAndrew, J. B.....	1911	McFarlane, J. A.....	1903
McAree, J. (deceased).....	1882	McFarlane, W. G.....	1904
McArthur, R. E.....	1900	McFarlane, J. B.....	1907
McArthur, A. S.....	1909	McFarlen, G. W.....	1888
McAuslan, H. J.....	1903	McFarlen, T. J.....	1893
McBride, A. H.....	1902	McFaul, W. L.....	1913
McBride, T. C.....	1910	McGarry, P. J.....	1910
McCaffrey, W. R.....	1915	McGeorge, W. G.....	1908
McCandlish, S. G.....	1917	McGhie, W. G.....	1911
McCarthy, T. V.....	1913	McGibbon, C. P.....	1904
McClelland, H. L.....	1917	McGie, W. R.....	1915
McCollum, C. R.....	1909	McGill, S. B.....	1914
McConnell, A. W.....	1906	McGorman, S. E.....	1906
McConnell, R. S.....	1913	McGowan, J.....	1895
McCordick, A. S.....	1909	McGregor, W. W. (deceased) ..	1905
McCort, C. R.....	1915	McGregor, J. M.....	1908
McCrodan, B. A.....	1916	McGugan, D. F.....	1915
McCuaig, O. B.....	1904	McGugan, D. J.....	1907
McCuaig, P. J.....	1909	McIlhargey, P. E.....	1917
McCulloch, A. L.....	1887	McIlwraith, D. G.....	1906
McCurdy, J. A. D.....	1907	McIntosh, A. H.....	1907
McDonald, K. D.....	1915	McIntosh, W. G.....	1909
McDonald, J. P.....	1915	McIntyre, J. S.....	1915
McDonald, N. G.....	1918	McKague, E. V.....	1915
McDonald, R. C.....	1914	McKay, O.....	1885
McDougall, J. (deceased).....	1884	McKay, C. (deceased).....	1904
McDougall, S. G.....	1910	McKay, W. N.....	1895
McDowall, R.....	1888	McKechnie, F. H.....	1909
McEachren, J. A.....	1911	McKenzie, D. A.....	1911
McElhanney, T. A.....	1910	McKenzie, D. W.....	1905
McElroy, R. W.....	1911	McKenzie, J. A.....	1906

McKim, L. R.....	1910	McMillan, V.....	1909
McKinnon, H. L.....	1895	McMordie, H. C.....	1908
McKnight, J. H.....	1909	McNab, J. V.....	1906
McLaren, A. J.....	1911	McNaughton, A. L.....	1903
McLaren, D. L.....	1914	McNaughton, F. W.....	1898
McLean, C. A.....	1905	McNeill, F. W.....	1907
McLean, W. N.....	1905	McNiven, J.....	1910
McLean, L. A. (deceased)...	1908	McPherson, A. J.....	1893
McLeish, A. G.....	1911	McPherson, J. A.....	1906
McLellan, R. A.....	1911	McPherson, W. B.....	1911
McLennan, A. L.....	1902	McQuarrie, M. K.....	1907
McLeod, E. W.....	1918	McQueen, A. A.....	1911
McLeod, G.....	1909	McRoberts, A. A.....	1908
McMaster, A. T. C.....	1901	McSloy, J. I.....	1910
McMaster, W. A. A.....	1908	McTaggart, A. L.....	1894
McMillan, J. G.....	1900	McVean, H. G.....	1901
McMillan, D.....	1904		

M

Mace, F. G.....	1905	Matthews, A. C.....	1910
Madden, J. F. S.....	1902	Maus, C. A.....	1903
Maddock, C. O.....	1918	Maxwell, H. W.....	1914
Madge, N. G.....	1908	Maxwell, W. A.....	1906
Madill, H. H.....	1911	Maynard, H. V.....	1907
Main, W. T.....	1893	Meadar, C. H.....	1910
Maisonville, A. W. R.....	1910	Meadows, C. A.....	1911
Malcolm, A. L.....	1909	Meadows, W. W.....	1895
Malcolmson, W. S.....	1907	Meahan, P. W.....	1914
Malone, J. E.....	1908	Mechin, F. C.....	1914
Manning, N. H.....	1909	Meitz, W. H.....	1915
Manning, R. C.....	1917	Melson, J. W.....	1907
Manson, G. J.....	1904	Mendizabal, A. R.....	1918
Manson, A. B.....	1909	Mennie, R. S.....	1902
Marani, C. J.....	1888	Menzies, J. M.....	1906
Marani, V. G.....	1893	Merrill, E. B.....	1890-1891
Margison, O.....	1916	Merriman, H. O.....	1910
Marlatt, K. D.....	1908	Middleton, H. T.....	1901
Marr, N.....	1910	Mickle, G. R.....	1888
Marriott, F. G.....	1903	Mickleborough, K. F.....	1913
Marrs, C. H.....	1902	Mickler, G. J.....	1913
Marrs, D. W.....	1906	Mill, F. X. (deceased).....	1889
Marshall, J. A.....	1914	Millar, W. G.....	1914
Marshall, J. A. P.....	1914	Miller, D. J.....	1910
Marshall, R. J.....	1908	Miller, A. S.....	1914
Marshall, S. A.....	1907	Miller, L. Haun.....	1900
Martin, E. T.....	1915	Miller, M. L.....	1903
Martin, F.....	1887	Miller, L. R.....	1906
Martin, J. C.....	1911	Milligan, G. L.....	1908
Martin, W. H.....	1910	Milligan, F. S.....	1910
Martin, T.....	1896	Milligan, W. E.....	1914
Martindale, E. S.....	1909	Millman, N. C.....	1913
Martyn, O. W.....	1909	Mills, F. L.....	1915
Mason, D. H. C.....	1907	Mills, G. G.....	1907
Mathers, A. S.....	1917	Mills, P. E.....	1910
Matheson, W. C.....	1901	Mills, P. H.....	1914
Mathison, P.....	1901	Mills, L. G.....	1911
Matthews, R. G.....	1914	Milne, C. G. (deceased).....	1892

Mines, W.....	1893	Moorhouse, W. N.....	1904
Minns, J. B.....	1907	Morden, L. W.....	1905
Minty, W.....	1894	Morgan, J. P.....	1910
Mitchell, A. B.....	1908	Morice, J. H.....	1908
Mitchell, G.....	1915	Morley, P. F.....	1907
Mitchell, J. S.....	1914	Morphy, J. A.....	1911
Mitchell, P. H.....	1903	Morris, A.....	1915
Mitchell, L. C.....	1911	Morris, B. M. (deceased)....	1915
Mitchell, C. H.....	1892	Morris, J. L.....	1881
Mitchell, B. F.....	1906	Morris, C. A.....	1909
Mitchell, R. C.....	1918	Morris, W. D.....	1915
Mitchell, W. B.....	1916	Morrison, D.....	1914
Moberley, H. K.....	1889	Morton, G.....	1909
Moffatt, R. W.....	1905	Mowbray, F. E. H.....	1908
Mogan, J. T.....	1915	Muir, J. M.....	1915
Molesworth, G. N.....	1907	Mullins, E. E.....	1903
Molesworth, J. C. P. (de- ceased).....	1908	Mullins, G. J.....	1914
Monds, W.....	1899	Mulqueen, F. J.....	1913
Monk, E. D.....	1908	Munro, A. H.....	1910
Montague, J. R.....	1914	Munro, W. H.....	1904
Montague, F. F.....	1906	Munro, G. R.....	1905
Monteith, E. M.....	1915	Munro, F. V.....	1909
Montgomery, R. H.....	1903	Muntz, E. P.....	1914
Moody, F. H.....	1908	Murdie, W. C.....	1913
Moore, H. H.....	1902	Murdock, C. R.....	1906
Moore, E. E.....	1904	Murphy, C. J.....	1906
Moore, J. H.....	1888	Murphy, M. H.....	1911
Moore, J. E. A.....	1891	Murray, E. W.....	1907
Moore, F. A.....	1903	Murray, J. D.....	1907
Moore, W. J.....	1906	Murray, W. P.....	1908
Moore, J. M.....	1907	Murton, J. C.....	1911
		Mutch, D. A. S.....	1913

N

Nash, J. C.....	1901	Newton, W. E.....	1910
Nash, T. S.....	1902	Ney, C. H.....	1916
Near, W. P.....	1906	Nichol, F. T.....	1910
Neelands, E. V.....	1900	Nicholson, C. J.....	1894
Neelands, E. W.....	1907	Nicholson, C. L.....	1914
Neelands, R. E. K.....	1907	Nicholson, J. B.....	1914
Neelands, R.....	1906	Nicklin, H. S.....	1915
Neilly, B.....	1907	Nicklin, W. G.....	1905
Neilson, M. A.....	1915	Niebel, E. H.....	1911
Neville, E. A.....	1909	Nixon, C. K.....	1911
Nevitt, I. H.....	1903	Noble, E. S.....	1911
Newcombe, J. C. (deceased) ..	1916	Noecker, C.....	1914
Newhall, V. A.....	1910	Northey, R. K.....	1911
Newman, W.....	1891	Nott, G. E.....	1916
Newton, J.....	1909	Nourse, A. E.....	1907
Newton, K. L.....	1913		

O

O'Brien, E. D.....	1905	Offerhaus, W. A. R.....	1917
O'Brien, J. E.....	1917	O'Flynn, W. A.....	1911
O'Callaghan, E. A.....	1916	O'Grady, W. deC.....	1908
O'Connor, E. B.....	1915	O'Hearn, J. J.....	1909
Odell, L. S.....	1909	Oke, W. V.....	1911
O'Donnell, V. J.....	1909	Oliver, C. E.....	1916

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Oliver, E. W.....1903
 Oliver, J. P.....1903
 Omand, W. M.....1915
 O'Neil, C. M.....1910
 Orr, J. A.....1911

Orr, W. H.....1918
 O'Sullivan, J. J.....1907
 Otto, C. J.....1913
 Owens, J. A.....1914

P

Pace, J. D.....1903
 Pace, G.....1904
 Pae, A. W.....1909
 Palmer, C. E.....1910
 Pardoe, W. S.....1904
 Paris, J.....1904
 Park, D. G.....1906
 Parke, J.....1904
 Parker, A. H.....1914
 Parker, G. C.....1910
 Parker, J. S.....1911
 Parkin, J. H.....1911
 Parkinson, N. F.....1913
 Parr, H. A.....1917
 Parsons, J. L. R.....1901
 Paterson, G. W.....1906
 Paton, T. K.....1907
 Patten, B. B.....1903, 1905
 Patterson, J.....1899
 Patterson, R. G.....1914
 Patton, J. McD.....1911
 Paul, R. A.....1915
 Paulin, F. W.....1907
 Payne, A. N.....1915
 Peaker, W. J.....1904
 Pearce, K. K.....1910
 Pearce, L. P.....1915
 Pearson, C. L.....1911
 Pearson, G. P.....1918
 Peart, J. D.....1914
 Peart, J. W.....1913
 Peck, H. M. (deceased).....1915
 Peckover, H. J.....1908
 Pedder, J. R. (deceased).....1890
 Pennington, C. W.....1914
 Pepler, S. J. (deceased).....1911
 Pequegnat, M.....1908
 Perrin, W. J. (deceased).....1911
 Perron, E.....1913
 Perry, C. V. (deceased).....1914
 Peterkin, S. M.....1915
 Petry, A. M.....1909
 Pettingill, R. E.....1906

Phillips, E. H.....1900
 Phillips, H. G.....1908
 Phillips, C. H.....1910
 Phillips, E. P. A.....1905
 Phillips, W. E.....1914
 Philp, D. H.....1903
 Philp, G. O.....1914
 Philp, W. M.....1909
 Pick, B. W.....1911
 Pickering, A. E.....1904
 Pigott, R. B.....1909
 Pinhey, C. H.....1887
 Pinkney, D. H.....1903
 Pivnick, M.....1908
 Playfair, N. L.....1892
 Plunkett, T. H.....1903
 Ponton, G. M.....1909
 Pope, A. S. H.....1899
 Porte, E. H.....1911
 Porte, W. B.....1905
 Porter, C. F.....1915
 Porter, C. J.....1909
 Porter, J. E.....1915
 Potter, R. B.....1907
 Powell, G. G.....1902
 Powell, N. L.....1916
 Powell, W. D.....1915
 Power, G. H.....1901
 Pratt, F. M.....1911
 Prentice, J. M. (deceased).....1892
 Price, H. W.....1901
 Pringle, J. E.....1916
 Prochnow, F. E.....1907
 Proctor, A. I.....1909
 Proctor, E. M.....1908
 Procunier, J. F.....1907
 Proudfoot, H. W. (deceased).....1897
 Publow, C. F.....1908
 Pullan, H.....1911
 Pullen, E. F.....1905
 Purdy, W. F. P.....1915
 Purser, R. C.....1906
 Pye, D. E.....1910

Q

Quail, H. C. (deceased).....1913
 Quail, J.....1909

Quance, G. E.....1907
 Quinlan, L. J.....1911

R

Railton, L. W.....1911
 Raine, H.....1907

Raley, W. E. (deceased).....1915
 Ramsay, W. S.....1910

Ramsey, G. L.....	1905	Robinson, A. H. A.....	1897
Ramsperger, A. F.....	1909	Robinson, L. H.....	1904
Rance, C. C.....	1915	Robinson, W. A.....	1908
Raney, P. H. (deceased).....	1914	Robinson, R. C.....	1908
Rankin, G.....	1915	Robinson, W. E.....	1911
Rannie, J. L.....	1907	Roblin, H. L.....	1911
Ransom, J. T.....	1908	Roddick, J. O.....	1906
Ratz, E. G.....	1913	Rogers, J.....	1887
Ratz, J. E.....	1911	Rogers, C. H.....	1906
Ratz, R. D.....	1917	Rogers, L. J.....	1908
Ratz, W. F. (deceased).....	1902	Rolfson, O.....	1906
Raymer, A. R.....	1884	Rolph, H.....	1894
Raymond, D. C.....	1904	Rose, H. C.....	1916
Rayner, G. W.....	1905	Rose, J. T.....	1915
Read, F. N. (deceased).....	1911	Rose, K.....	1888
Redfern, B. J. (deceased).....	1910	Rose, R. R.....	1908
Redfern, W. B.....	1908	Rosebrugh, T. R.....	1888
Redfern, C. R.....	1909	Ross, A. C.....	1915
Redman, W. B.....	1915	Ross, J.....	1915
Reid, E. V. (deceased).....	1911	Ross, J. A.....	1892
Reid, F. B.....	1904	Ross, J. E.....	1888
Reid, F. G.....	1915	Ross, D.....	1908
Relyea, P. J.....	1915	Ross, R. A.....	1890
Revell, G. E. (deceased).....	1899	Ross, K. G.....	1906
Rice, R. H.....	1914	Ross, R. B. (deceased).....	1905
Richards, E.....	1899	Ross, R. C.....	1906
Richardson, A. A.....	1915	Ross, S. R.....	1916
Richardson, C. E.....	1910	Ross, S. W.....	1916
Richardson, C. W. B.....	1907	Ross, O. W.....	1910
Richardson, F. L.....	1908	Rothery, L. W.....	1911
Richardson, G. H.....	1888	Rothwell, T. E.....	1905
Richardson, W. A.....	1911	Rothwell, H. E.....	1907
Richmond, J.....	1916	Rothwell, H. D.....	1914
Ricker, H. A.....	1908	Rounthwaite, C. H. E.....	1900
Riddell, J. M.....	1913	Rous, C. C.....	1913
Riddell, M. R.....	1904	Routly, H. T.....	1906
Ridler, A. A.....	1907	Rovsky, J.....	1918
Ritchie, H. C.....	1910	Rowe, H. M.....	1915
Ritchie, J. E.....	1913	Rowe, T. L. F.....	1911
Roaf, J. R.....	1900	Roxburgh, G. S.....	1904
Robertson, A. S.....	1914	Rubidge, W. F. B.....	1910
Robertson, A. S.....	1915	Runciman, A. S.....	1911
Robertson, C. S.....	1913	Russel, W. B.....	1891
Robertson, F. A.....	1908	Russel, R.....	1893
Robertson, H. D.....	1902	Russell, C. H.....	1913
Robertson, J.....	1884	Russell, J. P.....	1916
Robertson, J. M.....	1914	Rust, H. P.....	1901
Robertson, J. M.....	1893	Rutherford, F. N.....	1904
Robertson, N. R.....	1906	Rutherford, F. S.....	1914
Robertson, A. R.....	1908	Rutledge, L. T.....	1909
Robertson, D. F.....	1903	Rutley, F. G.....	1911
Robinson, J. K. (deceased).....	1891	Rutter, G. W.....	1915
Robinson, F. J. (deceased).....	1895	Ryckman, J. H.....	1906

S

Sagar, W. L.....	1918	Sanders, W. K.....	1906
Salter, E. M.....	1911	Sanderson, A. U.....	1909
Samuel, M.....	1918	Sara, R. A.....	1909

Sauder, P. M.....	1904	Sibbett, W. A.....	1911
Sauer, M. V.....	1901	Sievwright, R. L.....	1916
Saunders, G. A.....	1899	Sills, C. P.....	1911
Saunders, H. W.....	1900	Silvester, G. E.....	1891
Savage, E. W.....	1915	Sime, A. W.....	1914
Scandrett, F. R.....	1911	Simpson, B. N.....	1914
Scarlett, A. A.....	1913	Simpson, C. N.....	1915
Scheibe, R. R.....	1896	Sims, F. R.....	1913
Scheibe, H. M.....	1903	Sinclair, D. (deceased).....	1902
Schofield, C. A.....	1907	Sinclair, D. G.....	1913
Schwenger, C. E.....	1909	Sinclair, C. E.....	1914
Scott, A. G.....	1915	Sinclair, R. B. (deceased).....	1915
Scott, C. A.....	1909	Sisson, C. E.....	1905
Scott, C. R.....	1918	Skaith, J. B.....	1914
Scott, E. H.....	1915	Skinner, J. L.....	1916
Scott, G. S.....	1905	Skinner, W. C.....	1914
Scott, J. G. (deceased).....	1914	Slater, F. W.....	1904
Scott, Miss H. E.....	1911	Smallpiece, F. C.....	1898
Scott, J. W.....	1911	Smart, R. S.....	1904
Scott, R. G.....	1915	Smelser, W. A.....	1916
Scott, W. A.....	1906	Smiley, R. W.....	1897
Scott, W. B.....	1916	Smith, A. N.....	1892
Scott, W. F.....	1897	Smith, A.....	1894
Seaborne, R. L.....	1916	Smith, C. A.....	1916
Seaton, N. D.....	1911	Smith, E. E.....	1917
Secord, A. O.....	1908	Smith, H. G. (deceased).....	1903
Sedgwick, A.....	1909	Smith, H. M. (deceased).....	1914
Segre, B. H.....	1909	Smith, R. W. (deceased).....	1898
Seibert, F. V.....	1909	Smith, J. H.....	1903
Serson, H. V.....	1905	Smith, D. A.....	1904
Servos, F. M.....	1914	Smith, K. H.....	1911
Sewell, L.....	1913	Smith, M. L. (deceased).....	1911
Seymour, H. L.....	1903	Smith, W. C.....	1910
Seymour, N. F.....	1915	Smith, G. E.....	1910
Shanks, T.....	1899	Smith, F. L.....	1910
Sharp, M. C.....	1913	Smith, F. R.....	1907
Sharpe, N.....	1911	Smither, W. J.....	1904
Shaw, J. H.....	1898	Smithrim, E. R.....	1907
Shaw, J. H.....	1915	Smithson, E. W.....	1917
Shaw, K. E.....	1913	Smyth, A. H.....	1915
Shaw, W. E. V.....	1908	Smyth, G. M.....	1914
Shaw, M. R.....	1909	Snaith, W.....	1907
Shaw, W. C.....	1910	Sneath, R. G.....	1911
Sheard, P.....	1911	Snider, A. M.....	1917
Shearer, H. F.....	1908	Somers, N. L.....	1914
Sheehy, J. S.....	1915	Soper, R. W. (deceased).....	1913
Sheply, J. D.....	1904	Sparling, M. W.....	1909
Shepley, J. G. (deceased).....	1918	Speirs, R. M.....	1917
Sheppard, A. C. T.....	1907	Speller, F. N.....	1893
Sheppard, H. L.....	1914	Spellman, W. A.....	1913
Sheppard, N. E. D.....	1914	Spence, J. J.....	1909
Sherman, N. C.....	1910	Spencer, A. C.....	1907
Shields, J. D.....	1894	Spotton, A. K.....	1894
Shier, W. G. (deceased).....	1915	Spry, R. J.....	1910
Shipley, A. E.....	1898	Squire, G. E.....	1911
Shirriff, C. H.....	1905	Squire, R. H. (deceased).....	1893
Shupe, S.....	1914	Stamford, W. L.....	1908

Standing, R. O.....	1914	Stone, L. I.....	1910
Stark, W. H.....	1916	Stoneman, E. C. R.....	1914
Starr, R. H.....	1908	Storey, G. C.....	1915
Stayner, D. S.....	1909	Story, R. A.....	1911
Steel, W. A.....	1915	Strathy, J. M. (deceased)....	1913
Steele, I. J.....	1902	Street, J. C.....	1909
Steele, A. L.....	1910	Strome, I. R.....	1914
Steele, W. S. (deceased)....	1911	Stroud, J. E. C.....	1915
Stern, E. W.....	1884	Stroud, S.....	1909
Steven, H. M.....	1910	Stuart, H. B.....	1908
Stevenson, W. H.....	1901	Stuart, J. L. G.....	1907-1908
Stewart, A. E.....	1911	Stubbs, W. F.....	1905
Stewart, J. A.....	1898	Stull, W. W.....	1897
Stewart, D. L. N.....	1905	Sturdy, N. H.....	1905
Stewart, M. A.....	1905	Suhler, A. N.....	1915
Stewart, R. B.....	1909	Summers, G. F.....	1907
Stewart, R. O.....	1911	Sureda, J. A.....	1916
Stewart, W. M.....	1906	Sutcliffe, H. W.....	1907
Stewart, G. S.....	1907	Sutherland, A. L.....	1910
Stewart, A. W. J.....	1908	Sutherland, D.....	1913
Stewart, N. C.....	1909	Sutherland, W. H.....	1902
Stiles, J. A.....	1907	Sutherland, C. C.....	1909
Stitt, J. B.....	1915	Swan, A. W.....	1917
Stiver, J. L.....	1907	Swan, W. G.....	1905
St. Lawrence, J.....	1908	Swan, R. G.....	1909
Stock, J. J.....	1908	Sword, A. D.....	1908-1909
Stock, P. H.....	1909	Sykes, F. H.....	1905
Stocking, F. T.....	1895	Symmes, H. D.....	1891
Stone, J. D.....	1915	Szammers, C. F.....	1911

T

Tackaberry, S. G.....	1914	Thompson, W. K.....	1913
Tasker, R.....	1913	Thomson, A. P.....	1917
Tate, H. W.....	1909	Thomson, D. J.....	1913
Taylor, A.....	1900	Thomson, T. K.....	1886
Taylor, A. N.....	1915	Thomson, R. W.....	1892
Taylor, J. W. R.....	1908	Thomson, S. E.....	1904
Taylor, J. S. (deceased)....	1914	Thomson, L. R.....	1905-1907
Taylor, R.....	1911	Thomson, J. E.....	1906
Taylor, T.....	1902	Thomson, O. R.....	1907
Taylor, W. E.....	1908	Thorne, S. M.....	1900
Taylor, W. V.....	1893	Thornley, J. H.....	1908
Teasdale, C. M.....	1902	Thorold, F. W.....	1900
Temes, C. N.....	1914	Tillson, L. B.....	1915
Temple, J. B.....	1911	Tillson, E. D.....	1905
Tennant, D. C.....	1899	Tilston, C. E.....	1917
Tennant, W. C. (deceased)....	1900	Tilston, J. A.....	1914
Tennent, E. H.....	1914	Tipper, G. A.....	1909
Ternan, E. A.....	1910	Titus, C. G.....	1910
Thom, W. H.....	1910	Titus, O. W.....	1917
Thomas, G. C.....	1911	Tom, J. A.....	1915
Thomas, V. C.....	1908	Tomlinson, B. C.....	1917
Thompson, J. M.....	1913	Toms, C. G.....	1908
Thompson, P. M.....	1907	Topping, V.....	1917
Thompson, E. A.....	1909	Torrance, R. D.....	1911
Thompson, H. B.....	1910	Torrance, T. E.....	1913
Thompson, R. M. A.....	1910	Tough, W. G. (deceased)....	1911

Townsend, C. J.....	1904	Tucker, B. B.....	1904
Townsend, D. T.....	1904	Tufford, A. A.....	1917
Traill, J. J.....	1905	Tull, W. S.....	1914
Treadgold, W. M.....	1905	Turnbull, W. G.....	1909
Trees, S. L.....	1903	Turner, W. E.....	1905
Trees, A. G.....	1909	Tuttle, H. A.....	1917
Treloar, G. E.....	1914	Twidale, E. A. (deceased)...	1914
Tremaine, R. C. C. (deceased)	1895	Tye, H. W.....	1908
Tremayne, J. E.....	1916	Tyrrell, E. J.....	1917
Trimble, A. V.....	1904	Tyrrell, J. W.....	1883
Trow, R. M.....	1913	Tyrrell, H. G.....	1886

U

Uffelmann, W.....	1915	Ure, W. G.....	1913
Umbach, J. E.....	1903	Uren, A. E.....	1905
Underwood, J. E.....	1909		

V

Van Allen, K. M. (deceased)...	1910	Venney, L. T.....	1910
VanDyke, F. T.....	1914	Vercoe, H. L.....	1898
VanEvery, W. W.....	1899	Verity, M. F.....	1914
VanNorman, C. P.....	1908-1909	Vickers, N. (deceased).....	1911
VanNostrand, J.....	1909	Vickery, C. L. (deceased)....	1906
Vatcher, A.....	1909	Villeneuve, T. L.....	1908
Vaughan, J. M.....	1905	Von Gunten, C. F.....	1913

W

Waddell, H. O.....	1914	Watts, R. E. (deceased).....	1913
Wade, E.....	1904	Waugh, B.....	1908
Wagner, H. W.....	1914	Webb, C. E.....	1909
Wagner, N.....	1910	Webb, E. E.....	1909
Wagner, W. E.....	1899	Webster, C. A.....	1913
Wagner, H. L.....	1905	Webster, H.....	1913
Waite, J. H. C.....	1911	Wedlake, R. M.....	1908
Walcott, W. D.....	1911	Weeks, M. B.....	1897
Waldron, J.....	1903	Weir, D. H.....	1913
Walker, E. W. (deceased)....	1904	Weir, F. E.....	1915
Walker, R. M.....	1910	Weir, H. M.....	1900
Walker, W. J.....	1907	Weir, J. M.....	1904
Walker, J. A.....	1908	Weir, R. P.....	1908
Walker, C. M.....	1909	Weldon, E. A.....	1897
Wallace, G. L.....	1911	Welford, P. G.....	1911
Wallace, H. D. M. (deceased)	1914	Wells, A. F.....	1904
Walton, T. (deceased).....	1910	Wells, A. R.....	1916
Wanless, A. A.....	1902	Weppler, H. S.....	1916
Ward, A. L.....	1915	West, A. M.....	1908
Ward, F. W.....	1916	West, C. W.....	1915
Ward, R. C.....	1916	Wheler, A. G.....	1911
Wardell, A.....	1911	Whelihan, J. A.....	1903
Warrington, G. A.....	1910	White, A. H. V.....	1892
Wass, S. B.....	1903	White, F.....	1903
Watson, F. E.....	1911	White, W. R.....	1908
Watson, H. R.....	1917	White, W. J.....	1908
Watson, M. B.....	1910	White, F. C.....	1909
Watson, R. B. (deceased)....	1893	White, H. M.....	1910
Watson, J. P.....	1904	Whitelaw, A. R.....	1909
Watt, G. H.....	1899	Whitley, P. L.....	1914

Whitside, J. L. (deceased) . . .	1910	Wilson, L. R.	1909
Wickens, W. S.	1910	Wilson, N. D.	1903
Wickett, T.	1889	Wilson, W. H.	1910
Wickett, W. E. (deceased) . . .	1906	Wing, D. O.	1908
Widdicombe, A. E. (deceas'd) .	1916	Winters, W. S.	1913
Wiggins, T. H.	1890	Withrow, W. J. (deceased) . .	1890
Wigle, A. E.	1914	Withrow, F. D.	1900
Wigle, J. A. H.	1914	Wood, C. S.	1911
Wilkes, E. D.	1907	Wood, E. M.	1906
Wilkes, G. H.	1911	Wood, G.	1917
Wilkinson, T. A.	1898	Wood, H. A.	1915
Wilkinson, R. G.	1909	Wood, R. F. B.	1913
Williams, C. G.	1903	Woodley, G. E. (deceased) . .	1910
Williams, E. R.	1911	Woods, M. H.	1907
Williams, J. A. McK.	1909	Wookey, S. A.	1909
Williams, J. N.	1915	Woonton, W. G.	1918
Williams, G. K. (deceased) . .	1910	Worden, W. G.	1911
Williamson, O. T. G.	1909	Workman, G. R.	1910
Williamson, D. A.	1898	Worthington, W. R.	1904
Willson, R. D. (deceased) . . .	1901	Wright, A. J.	1913
Wilson, A. C.	1914	Wright, C. H. C.	1888
Wilson, A. F.	1907	Wright, G. W. A.	1907
Wilson, F. D.	1908	Wright, L. A.	1910
Wilson, F. F.	1909	Wright, R. T.	1894
Wilson, H. A.	1911	Wright, W. F.	1904
Wilson, H. P.	1914	Wright, W. J. T.	1911
Wilson, J. C.	1915	Wrong, F. H.	1911
Wilson, J. N.	1906	Wylie, W. H.	1911
Wilson, J. M.	1908	Wyman, H. K.	1911-1915

Y

Yeates, E.	1899	Young, R.	1908
Yorke, L. P.	1911	Young, R. B.	1913
Youell, A. W. (deceased) . . .	1910	Young, R. W.	1914
Young, A.	1911	Young, S.	1911
Young, C. R.	1903	Young, W. S.	1910
Young, J.	1907	Young, W. H.	1905

Z

Zahn, H. J.	1902	Zinkan, W. E.	1911
Zimmer, A. R.	1907		

